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ABSTRACT

Between 1991 and 1993, a statewide study of public preschool practices in North Carolina was conducted to determine the characteristics of pre-kindergarten programs and of the children and families they served; short-term outcomes for children; and kindergarten outcomes for children who attended public preschool compared to those with other preschool experiences. The study involved surveys of 170 public preschool administrators and teachers, 63 classroom visits, and the collection of preschool ratings by teachers of over 1,000 preschool children. In addition, 260 of these preschoolers were followed into kindergarten and compared with 288 of their peers who had attended public preschools, Head Start programs, other community child care programs, or no programs. Study findings included the following: (1) there was a wide range of quality and appropriateness of preschool classes in North Carolina; (2) teachers predicted that at the end of the pre-kindergarten year, 91.4% of the age-eligible children would be heading to kindergarten; and (3) the majority of the children served by the public preschools were ethnic minorities, and their relatively greater improvement suggests that these programs are benefiting this group. Based on study findings, it was recommended that public preschool programs in North Carolina improve cultural awareness activities, toileting facilities and practices, gross motor equipment, dramatic play materials, and professional opportunities for staff. The Appendix contains questionnaires and measures used. (AG)

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Evaluation of Public Preschool Programs in North Carolina

FINAL REPORT

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Evaluation of Public Preschool Programs in North Carolina

Final Report

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Frank Porter Graham Child Development Center
University of North Carolina at Chapel Hill

November 23, 1993

A Study Conducted for the North Carolina
Department of Public Instruction

Evaluation of Public Preschool Programs in North Carolina

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This report presents the results of a statewide study of public preschool practices in North Carolina conducted between 1991-1993 by researchers at the Frank Porter Graham Child Development Center. This evaluation of preschool practices was commissioned by the Department of Public Instruction to help guide continued improvements of programs as well as to help set directions for the ever-expanding numbers of preschool programs. We surveyed 170 public preschool administrators and teachers, conducted 63 classroom visits, and obtained preschool ratings on over 1000 preschool children. We followed 260 of these preschoolers into kindergarten, and compared them with 288 of their peers who had attended Head Start programs, other community child care programs or no programs. A summary of our findings and recommendations is available in two forms:

Executive Summary, November, 1993, 22 pages, $4.00 each, includes postage and handling.

Final Report, November, 1993, 116 pages, $12.00 each, includes postage and handling.

To order these publications, please send inquiries along with check or money order to:

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Preschool Study

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Frank Porter Graham Child Development Center

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Evaluation of Public Preschool Programs in North Carolina

Final Report

Donna M. Bryant, Ellen S. Peisner-Feinberg, and Richard M. Clifford

The purpose of this study was to provide an evaluation of public preschool programs in North Carolina. In the past six years, in response to the growing need for accessible, affordable, and appropriate preschool programs, the number of public school-based pre-kindergarten classes has increased rapidly, typically focused on at-risk children. In addition to standard early childhood center-based programs, which are usually funded with Chapter 1 monies, several preschool programs with an extra family emphasis have been initiated, often through the use of Chapter 2, Even Start, or private foundation funds. Although the philosophical and empirical research base supporting the development of pre-kindergarten programs is sound, no systematic study of these new North Carolina programs has been conducted.

The intent of this overall evaluation was to answer questions about several aspects of these public pre-kindergarten programs. This study focused on programs for at-risk children and did not include preschool classes that were conducted solely for children with diagnosed special needs. With surveys, questionnaires, and on-site observations, the first set of questions concerning descriptive program characteristics was addressed. These included questions such as

--Where are the public preschools located?
--What are the qualifications of public preschool teachers?
--What resources are available to programs?
--Are North Carolina's public preschool programs developmentally appropriate?

The second type of question addressed by this research concerned the children and families in public preschool programs, including

--What are the characteristics of the children and families being served by the pre-kindergarten programs?
--How are children typically selected?
--What is the developmental level of public preschoolers?
--In what ways are families involved?

The third set of research questions concerned the prediction of the short-term outcomes of public preschool children. By conducting classroom observations and collecting preschool teachers' ratings of children, the following questions were answered:

--Do children attending public preschool programs make greater than expected progress in communication and social-emotional development during their pre-kindergarten year?
--Do children who attend programs that are more developmentally appropriate make more progress than children in less developmentally appropriate classes?

Finally, because other preschool options are available to and experienced by many children (e.g., Head Start, other child care, home care), this study attempted to compare the outcomes of children in their kindergarten year based on their pre-kindergarten experience. Through individual assessments of kindergartners and kindergarten teacher ratings of children, the following questions were investigated:

> --Are public preschool graduates rated by their kindergarten teachers as more behaviorally competent in kindergarten than similar children who attended other organized programs or no program at all?
> --Do public preschool graduates score higher on achievement and language measures in kindergarten than similar children who attended other organized programs or no program at all?

The evaluation was comprised of three data collection phases, conducted between March, 1991, and April, 1993. Table 1 provides an overview of all phases of the study. The first component of the research consisted of a survey of all public preschool administrators and teachers in North Carolina. This survey was designed to obtain information about the current status of public preschool programs in the state, including the type of program, the population served, the services provided, classroom characteristics, staff characteristics, and respondents' beliefs about strengths and weaknesses of the program. Much of the descriptive information about programs and children came from these surveys.

The second component of the study consisted of observations of a random sample of 63 preschool classrooms in the 1991-92 school year. This component of data collection added much detail about the quality and developmental appropriateness of public preschool classrooms. Teachers also rated the cognitive and behavioral characteristics of the 1022 children in those classrooms in the fall and spring of the children's preschool year. From these ratings, the third set of research questions concerning the relationship between classroom quality and child progress during the preschool year could be answered.

The third component of the study consisted of a follow-up of a random sample of 276 public preschool graduates when they were in kindergarten (in the 1992-93 school year) compared to three other randomly selected groups of their classmates: children who attended Head Start, children who attended other child care programs, and children who attended no group care. This phase of the study was intended to investigate the fourth research question mentioned above, the short-term outcomes of public preschool compared to other types of care that children from poor families usually experience.

This final report is divided into five sections: a brief review of the research literature and the North Carolina conditions that prompted this study; a section devoted to each of the three research data collection phases, their methods, results, and outcomes; and a final summary and recommendation section.

REVIEW OF PREVIOUS RESEARCH

The critical evidence for the short- and long-term benefits of early intervention has been provided by several model preschool program evaluations conducted in the 1960s and 1970s, results that were summarized and expanded upon by the Consortium for Longitudinal Studies (Lazar, Darlington, Murray, Royce & Snipper, 1982). Most of these studies served children from low-income and primarily minority families, and all grew out of the psychological and educational zeitgeist of the late 1950s and 1960s which included a belief that infants and young children were quite malleable and could be readily molded by the proper early childhood environment. In fact, many of these model early intervention programs did indeed have significant effects on children's IQ and achievement, including a project conducted in Chapel Hill, the Abecedarian Project (Ramey, Campbell, & Bryant, 1987).

Table 1

Overview of Study

Type of Data	Number	Time Period
Administrator Surveys	42	Spring 1991
Teacher Surveys	128	Spring 1991
Classroom Visits	63	Fall 1991
Early Childhood Environment Rating Scale Five-Minute Interactions		
Preschool Teacher Ratings	1022 children[1] (61 classes)	Fall 1991 Spring 1992
Vineland Adaptive Behavior Scale Adaptive Social Behavior Inventory Attitudes to School Items		
Kindergarten Assessments	592 children	Fall/Winter 1992-93
Peabody Picture Vocab. Test-R Woodcock-Johnson Tests of Achievement (Reading & Math)	276 Public preschool 97 Head Start 99 Community preschool 120 No preschool	
Kindergarten Teacher Ratings	548 children	Fall/Winter 1992-93
Social Skills Questionnaire Vineland Communication Domain	260 Public preschool 90 Head Start 87 Community preschool 111 No preschool	

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[1] Of the 1022 children on whom fall or spring preschool ratings were gathered, 776 children from 53 classes had both fall and spring ratings.

Probably the most widely known pre-kindergarten program is Head Start, begun in 1965 to serve children from low-income families. It grew from a six-week, summer, center-based child development program into a school-year child and family development program. The first goal of Head Start has been to provide disadvantaged children with the skills necessary for success in school and in life and the second has been to assist Head Start families toward self sufficiency. Its four main components have been education, health, parent involvement, and social services. Some of the early enthusiasm for prevention programs in general was diminished by the Westinghouse study of Head Start (Westinghouse Learning Corporation, 1969), even though it was methodologically flawed, and by statements that "we have tried compensatory education and it has failed" (Jensen, 1969). However, more recent studies of Head Start (McKey, et al., 1985) have shown short-term effects on cognitive functioning, although there is little evidence for long-term effects from Head Start (Lee, Brooks-Gunn, Schnur, & Liaw, 1990).

Although Head Start has not demonstrated significant long-term benefits, the Consortium for Longitudinal Studies did show long-term effects on improved school achievement, fewer grade retentions, and fewer special placements for children who received an early intervention program before entering public school (Lazar, et al., 1982). The Consortium study succeeded in renewing the focus on early childhood as a time to "make up" for some of the environmental deficits that disadvantaged children may have experienced.

To summarize the efficacy data, there is evidence that preschool and Head Start can have short-term success in improving the school performance of children from disadvantaged families. Long-term effects on children's school performance have also been demonstrated by model demonstration programs that have used varying models of early education for threes and fours. Most of the Consortium studies and most other programs that are frequently cited as evidence that preventive intervention programs are beneficial have been programs conducted by university researchers or model programs with generous funding and highly qualified staff. These programs have often been described as "high-quality" programs, but what exactly does that mean?

"Quality" consists of age and individual appropriateness of a program, a curriculum (activities) that provides for physical, emotional, social and cognitive development, many opportunities for child-directed activities, involvement of families, good teacher/child ratios, and qualified and well-trained staff. The literature on developmental appropriateness has been summarized and recommendations have been made by the National Association for the Education of Young Children (NAEYC) (Bredekamp, 1987) and in a position statement issued jointly by the NAEYC and the National Association of Early Childhood Specialists in State Departments of Education (1991). Because the quality of a preschool program appears to be one of the critical factors in the program's effectiveness, characteristics of classrooms including developmental appropriateness, teaching practices, and material resources, must be considered when attempting to determine the outcomes of pre-kindergarten programs

Many studies suggest that children's development, when they are in a program and for several years afterwards, is influenced by the quality of the program (see Phillips & Howes, 1987, for a review of this literature). For example, children attending programs with poorer physical facilities and fewer language experiences had poorer language development than children from programs that were better on these dimensions (McCartney, 1984). Using the same sample, Phillips, McCartney, and Scarr (1987) found children from better quality programs more considerate, sociable, and task oriented and less anxious than children from poorer quality programs. Controlling for social class, Vandell, Henderson, and Wilson (1988) found that 8-year-olds who had attended poor quality daycare centers showed more problematic development than did their counterparts who had attended higher quality programs 4 years earlier. During play sessions, they had fewer friendly interactions and more unfriendly interactions. Observers rated them as less socially competent and unhappier, while peers saw them as more shy. Another study found that children in classes with more positive caregiving were more likely to be emotionally secure with teachers while children whose caregiving was adequate or barely adequate were more likely to be avoidant or ambivalent with teachers. Children who were more secure with their caregivers were, in turn, more competent with peers than children with insecure caregivers (Howes, Phillips, & Whitebook, 1992). Finally, the National Child Care Staffing study found that teachers with higher education and with backgrounds in early childhood education engaged in more appropriate caregiving than did less educated teachers and they were rated as more sensitive and less detached (Whitebook, Howes, & Phillips, 1989). In turn, these teacher behaviors predicted child outcomes. Children with higher language development scores (PPVT and Adaptive Language Inventory scores) had more responsive teacher-child interactions and were cared for by teachers rated more sensitive. Children with higher language scores also had teachers with lower detachment scores and were cared for in rooms rated higher in appropriate caregiving.

Many of these studies relating classroom environment and teaching behaviors to children's developmental outcomes used the same classroom quality measure used in this North Carolina study, the Early Childhood Environment Rating Scale (Harms & Clifford, 1980). It is a widely used instrument in child development research and has been predictive of a number of child development outcomes. Some of the studies used other indices of classroom environment or teacher behavior, and many of these measures are also known to be highly correlated with the ECERS. Adopting it for use in this study allowed similar types of classroom quality-child outcome associations to be made.

North Carolina Efforts

The pre-kindergarten program in North Carolina is currently being implemented and expanded by choice at the local level, without a statewide mandate. In 1986-87, only three North Carolina public school LEAs administered pre-kindergarten programs for threes and fours, and they served slightly over 700 children (the majority in Charlotte-Mecklenburg). Within 4 years, by the time this study began, these numbers increased to 32 LEAs serving approximately 2400 young children. The majority of these children were in 26 school systems (105 classes) utilizing Chapter 1 funds to implement pre-kindergarten programs. Throughout this report, these programs will be referred to as "standard" pre-kindergarten classes. Standard classes provided daily educational experiences for young children, typically used the North Carolina curriculum *Circle of Childhood*, and attempted to involve parents in many ways--visits, conferences, volunteering--but most Chapter 1 programs did not usually have extra resources for parent involvement beyond what their school might have (i.e., a family coordinator for the whole school).

Between 1986 and 1990, several school systems added pre-kindergarten classes with family-involvement components that went beyond the services typically provided in the standard Chapter 1 pre-kindergartens. When this study began, three school systems were conducting 8 Even Start Family Literacy classes which added adult literacy and parenting education components to the typical preschool classroom. The staff in these programs also made home visits for the purposes of parent education and support and to provide appropriate services to younger siblings. One LEA operated a pre-kindergarten program with enhanced family services consisting of a variety of coordinated, interagency, on-site services for the families, such as health care, literacy training, GED programs, budget planning, and other services as requested by family members (Chapter 1 Enhancement Model). Two LEAs operated one class each with full-year, extended-day services (Chapter

2). A full range of family services were provided on-site through an interagency, collaborative effort managed by a family services coordinator.

Five LEAs conducted public preschools with an added family focus in collaboration with the N.C. Department of Community Colleges. These were funded by the U.S. Department of Education and were considered pilot projects. These programs also provided a comprehensive range of family services, including adult education and employment assistance, as well as health referrals and parent education. The adult basic education curriculum taught basic literacy skills using real-life situations essential to functioning productively in society. Parents were required to attend the adult part of the program for their children to remain eligible to attend the preschool. Four school systems, with funding from the Kenan Foundation, were conducting adult literacy and parent education programs in conjunction with their public preschool classes. Parents worked on the GED coursework and spent a portion of each day in the preschool in activities with their own children. (Because these Kenan programs were being evaluated by others, they were included only in the survey phase of this study.)

Throughout this report, all of these programs--Even Start, Chapter 1 Enhancement, Chapter 2, Department of Education grant pilot, and Kenan--will be referred to as "family-focused" pre-kindergarten classes. Extra resources and staff energy were required to add the special family services provided by these programs. Would this result in classroom characteristics or child outcomes that were noticeably different from those seen in the standard preschool classes? To study this question, family-focused classes were over-sampled in this evaluation.

Together, these standard and family-focused pre-kindergarten classes were the programs that were to become a part of this North Carolina study. Today--only 2 years later--more than 350 classes serving more than 5,000 pre-kindergartners are operated in North Carolina public schools. Often when pilot or model programs are expanded to serve larger populations, the expanded program may bear little resemblance to the initial model. As the number of public pre-kindergarten classes has increased across the state and the nation, educators and policymakers need to know more about the strengths and weaknesses of these programs in the real-world environment of schools, rather than solely in highly supported pilot programs.

As is clear from the rapidly increasing numbers of programs and children being served, local systems are finding ways to provide preschool. They focus on 4-year-old children, particularly those from disadvantaged families and those with special needs and try to provide developmentally appropriate experiences to enhance the children's opportunities for school success. This evaluation addresses the natural questions, "How well are these programs doing?" and "Do the children benefit?"

THE PRESCHOOL SURVEY STUDY

The first phase of the research consisted of a survey of all public preschool administrators and teachers in North Carolina. This survey was designed to obtain information about the current status of public preschool programs in the state, including the type of program, the population served, the services provided, classroom characteristics, staff characteristics, and respondents' beliefs about strengths and weaknesses of the program.

Method

Participants

In May, 1991, questionnaires were sent to all 51 North Carolina public preschool administrators and 173 teachers representing each public preschool program in operation in the 1990-91 school year. Included in the sample were the administrators and teachers of standard Chapter 1 programs and all of the various family-focused pilot programs. Preschool handicapped programs were not included. These programs were located in 44 local education agencies (LEAs). Surveys were returned by 82% (42) of the administrators and 74% (128) of the teachers. Because the 42 administrators who returned questionnaires represented 39 of the 44 LEAs, usable data was obtained on 89% of the districts.

Of the 9 administrators who did not return questionnaires, four of these were from districts with two administrators, one for their Chapter 1 and one for their family-focused program. In all four cases, one of the two administrators completed the questionnaire, providing information on all the programs in the district. Therefore, only five districts (11.4%) were not represented in the administrator reports. Examination of these five sites suggests no response bias, as they ranged in size from about 1200 to about 20,000 students in the 1990 final enrollment figures, and included from 1 to 5 preschool classes. Information was also obtained from at least one teacher in 90.9% (40) of the LEAs with preschool programs. Only one district provided neither administrator nor teacher information.

Procedure

A list of administrators was obtained from the State Department of Public Instruction (DPI). Each administrator was sent both an administrator questionnaire to complete and return and teacher questionnaires to distribute (a list of teachers was not available to the researchers). Attached to each questionnaire was a letter from the state Superintendent of Public Instruction encouraging participation, a cover letter from the researchers explaining the study, and a return envelope for the survey. Respondents were asked to return the surveys through the state courier system once they were completed. The cover letter requested return within approximately 3 weeks. Because of the close proximity to the end of the school year, follow-up letters were mailed to administrators about 2 weeks after the questionnaires were sent out. These letters encouraged them to return the questionnaires and to remind the teachers as well. Follow-up phone calls were then made to administrators about 1-2 weeks after the requested return date, asking them to return the surveys as soon as possible.

Instruments

Two questionnaires were developed for the survey component of the study: Questionnaire for Public Preschool Administrators and Questionnaire for Public Preschool

Teachers (see the Appendix). The Administrator Questionnaire contained questions on the following topics:

1) the location, teacher, and year of implementation of each preschool class in the district
2) methods of notification of the public about program
3) criteria for selecting participants
4) availability of consultants and services
5) curricula used
6) location of classrooms
7) transportation of children
8) plans for adding new classes
9) strengths and weaknesses of the program.

The teacher questionnaire contained items about the following topics:

1) type of class
2) demographic characteristics of the children and the staff
3) recommended kindergarten placement of current students
4) use of screening instruments
5) times of program operation
6) provision of meals
7) provision of services
8) curricula used
9) parent involvement
10) staff development
11) strengths and weaknesses of the program.

Results

Administrator Questionnaires

Notification about program. Administrators were asked to list the three primary ways parents found out about their program, as shown in Table 2. These responses were then compiled and coded into categories. Most of the respondents reported using public media, such as newspapers, radio, television, or brochures. Information sent home from school or posted in the school was used by more than half of the districts. Other primary techniques used included "word of mouth," referrals through community agencies or service providers, and direct contact with parents through visits to their homes or phone calls.

Criteria for participation. Administrators were asked to describe three criteria used to determine eligibility for children's participation in the preschool program. These responses were then categorized and summarized across all three. Student screening assessments were reported by more than half of the respondents, as shown in Table 3. The age of the child was a key criteria for about one-quarter. A number of administrators also reported making selection decisions on the basis of parent education. Each of these districts included at least one class based on a program model which focuses on parent education as a key component (i.e., Even Start, U.S. Department of Education Grant Pilot, or Kenan). Other criteria reported by administrators were reference to specific eligibility guidelines (e.g., special education, P.L. 99-457 guidelines, Chapter I, Kenan Literacy Model), general definitions of "educationally disadvantaged," parental commitment, application date, and home environment.

Table 2

Frequency of Administrator Reports of Primary Ways for Notification about Program

n=42

Type of Notification	Frequency	Percentage
Public media	38	90.5
School communication	25	59.5
Word of mouth	16	38.1
Referrals	11	26.2
Direct contact	6	14.3
No response	1	2.4

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Table 3

Frequency of Administrator Reports of Criteria for Eligibility

n=42

Criteria	Frequency	Percentage
Screening tests	24	57.1
Child age	11	26.2
Parent education	7	16.7
Eligibility guidelines	7	16.7
Educationally disadvantaged	4	9.5
Parental commitment	3	7.1
Application date	3	7.1
Home environment	2	4.8
Other	4	9.5
No response	1	2.4

Selection of children. Administrators were asked to list three factors used to select children for the program when more children are eligible than can be served. These responses were then coded into categories similar to those in the previous question. Student scores on screening tests were reported by over half of the administrators (see Table 4). General definitions of the degree of educational disadvantage were reported as a selection factor by more than one-third of the administrators. Few used application date as a determining factor. Various other criteria were also reported, including lottery, parent or family need, and balance of the class. A few administrators reported not needing to use selection factors, most likely because all the applicants could be enrolled.

Administrators also reported who made these selection decisions, as indicated in Table 5, with up to three responses coded. Principals or administrators and teachers were included in this process according to more than half of the reports. Specialists, such as psychologists, teachers of exceptional children, or preschool specialists, were included by a few of the sites. Other individuals involved in selection decisions included adult education teachers, psychiatrists, and the individual who administered the screening test. Sometimes non-school people would randomly select the participants in a drawing. This question was reported as not applicable by a few of the administrators.

Administrators were asked to give the definition of "educationally deprived" they use in their program, with up to two categories coded. As seen in Table 6, the most frequent response was standardized test scores or screening instrument scores. Definitions of developmental status were also reported by about one-quarter. Family history or home environment were considered part of the definition of "educationally deprived" by only 2 of the respondents. The question was labelled not applicable or was not answered by more than 25% of the administrators.

Administrators were also asked to give the definition of "at-risk" used in their program, with up to two factors coded. This term was reported as not applicable or not answered by more than half of the respondents, as indicated in Table 7. Of those who did use a definition of "at-risk," educational deprivation, the home environment, parent education, and scores on screening or standardized tests were each occasionally mentioned.

Preschool consultants and services. Administrators reported whether various types of consultants or services were available to the preschool program, as shown in Table 8. Speech/language therapists were available to almost all of the programs. Early education specialists and psychologists were available at nearly three-quarters of the sites. More than half the programs also had social workers, parent coordinators, and audiologists. Fewer than one-third of the administrators reported the availability of physical therapists or occupational therapists. A few respondents reported the availability of other services, such as health and social services, and other educational supports such as guidance counselor or educational consultant.

Family services. Administrators also reported whether various types of family services were available to parents of preschool participants. As found in Table 9, parent education was provided in most of the programs, as were social services referrals. Adult basic education or literacy training was available at nearly half of the programs. Health services, crisis intervention services, and employment services were provided through some of the programs. Other services reported by administrators included transportation, child care, parent workshops and other parent and parent-teacher activities.

Curriculum. Administrators were asked to report both the main and the supplementary curricula used in the preschool programs. Up to two responses were coded

Table 4

Frequency of Administrator Reports of Criteria for Selection

n=42

Criteria	Frequency	Percentage
Screening tests	23	54.8
Educational disadvantage	16	38.1
Application date	2	4.8
Other	10	23.8
Not applicable	3	7.1

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Table 5

Frequency of Administrator Reports of Individuals Involved in Selection Decisions

n=42

Individuals	Frequency	Percentage
Administrators/Principals	26	61.9
Teachers	23	54.8
Specialists	5	11.9
Others	9	21.4
Not applicable	5	11.9

Table 6

Frequency of Administrator Reports of Definitions of "Educationally Deprived"

n=42

Definition	Frequency	Percentage
Test scores	17	40.5
Developmental status	10	23.8
Family environment	2	4.8
Other	1	2.4
Not applicable	10	23.8
No response	2	4.8

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Table 7

Frequency of Administrator Reports ofDefinitions of "At-risk"

n=42

Definition	Frequency	Percentage
Educational deprivation	6	14.3
Home environment	5	11.9
Parent education	3	7.1
Test scores	2	4.8
Other	4	9.5
Not applicable	20	47.6
No response	5	11.9

Table 8

Frequency of Administrator Reports of Availability of Preschool Consultants and Services

n=42

Service	Frequency	Percentage
Speech/language therapist	38	90.5
Early education specialist	32	76.2
Psychologist	30	71.4
Social worker	26	61.9
Parent coordinator	26	61.9
Audiologist	25	59.5
Physical therapist	13	31.0
Occupational therapist	10	23.8
Other	10	23.8

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Table 9

Frequency of Administrator Reports of Availability of Family Services

n=42

Service	Frequency	Percentage
Parent education	35	83.3
Social services referrals	26	61.9
Adult education	20	47.6
Health services	13	31.0
Crisis intervention	9	21.4
Employment services	7	16.7
Other	5	11.9

for each of these questions. As shown in Table 10, a large majority of the programs used *Circle of Childhood* as their only curriculum or one of their two main curricula. A few programs considered other curricula to be their major focus, such as language and literacy curricula, High Scope, and social or developmental materials.

For the supplementary curricula, shown in Table 11, over half of the administrators either reported this as not applicable or did not answer the question. The most frequently used supplementary curriculum was High Scope, followed by developmental activities or materials, teacher or teacher-designed resources, other commercial materials or curricula, language/literacy/reasoning curriculum, and math/science curriculum. Overall, most of the programs used *Circle of Childhood* as a main curriculum, while about 19% used High Scope as either a main or supplementary curriculum.

Location of classrooms. Administrators were asked whether the preschool classes were located in school buildings with only preschool classes, in buildings with other grades, or in another facility. Classes were reported in preschool only buildings by 19.0% (8) of the administrators, in buildings with other grades by 88.1% (37), and in other locations by 9.5% (4). The other grades in the buildings included kindergarten only, the full range from K-1 through K-8, K-12, 4-5, and 4-8.

Transportation of children. Administrators were asked whether any of the preschool children were transported by the school system, and what types of vehicle were used. Most of the districts transported at least some of the children, primarily on regular school buses. None of the children were transported according to 11.9% (5) of the administrators; some of the children were transported in 64.3% (27) of the cases; and all of the children were transported in 23.8% (10). Of those who provided transportation, 86.5% (32) used a regular school bus, 8.1% (3) used a van, 2.7% (1) used a minibus, and 8.1% (3) used another type of vehicle.

Plans for new classes. When asked whether any new preschool classes were being planned for the next year, 38.1% (16) of the administrators responded affirmatively. Of those who planned on adding classes, 50% (8) were adding one class, 25% (4) were adding two classes, 18.8% (3) were adding three classes, and 6.3% (1) did not yet know how many new classes would be added.

Best aspects. Administrators were asked to describe the three best aspects of their programs. These responses were categorized and summarized across the three answers. Opportunities for parent involvement were cited as one of the best aspects by half of the respondents (see Table 12). Program staff and staff training were also mentioned frequently. The provision of a "developmentally appropriate" program, and the curriculum and activities were also often described as best aspects. The positive impact or opportunity provided by the program, administrative support and interagency cooperation, and the physical facilities, including space, materials, or equipment were also mentioned. Other infrequently reported responses included general child development, social development, child-initiated activities, class make-up or size, adult education, and support services.

Barriers. Administrators were also asked to describe three barriers to carrying out their programs. These responses were then categorized and summarized across all answers. The most frequently cited barrier was problems with the facilities, including space, materials, or equipment (see Table 13). Inadequate funding was also mentioned often. Although it was the most frequently mentioned best aspect, lack of parent involvement was reported as a barrier by 19% of the administrators. Of those administrators who mentioned parent involvement as a barrier, 62.5% (5) also mentioned it as a positive aspect, suggesting that they perceive the opportunities for parent

Table 10

Frequency of Administrator Reports of Main Curricula Used

n=42

Curriculum	Frequency	Percentage
Circle of Childhood	37	88.1
Language/literacy/reasoning	4	9.5
High Scope	3	7.1
Social development	2	4.8
Developmental activities	2	4.8
Peabody	1	2.4
Commercial materials	1	2.4
Other	1	2.4
No response	1	2.4

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Table 11

Frequency of Administrator Reports of Supplementary Curricula Used

n=42

Curriculum	Frequency	Percentage
High Scope	5	11.9
Developmental activities	4	9.5
Teacher resources	4	9.5
Commercial materials	3	7.1
Language/literacy/reasoning	2	4.8
Math/science	2	4.8
Peabody	1	2.4
Not applicable	9	21.4
No response	17	40.5

Table 12

Frequency of Administrator Reports of Three Best Aspects of the Preschool Program

n=42

Aspect	Frequency	Percentage
Parent involvement	21	50.0
Staff expertise	18	42.9
Developmentally appropriate	13	31.0
Curriculum / activities	12	28.6
Positive impact	7	16.7
Administrative support	6	14.3
Facilities	5	11.9
Child development	4	9.5
Social development	4	9.5
Child-initiated	3	7.1
Class make-up / size	3	7.1
Adult education	3	7.1
Support services	3	7.1
Funding	2	4.8
Language development	1	2.4
Other	1	2.4

Table 13

Frequency of Administrator Reports of Three Barriers to the Preschool Program

n=42

Barrier	Frequency	Percentage
Facilities	15	35.7
Funding	12	28.6
Parent involvement	8	19.0
Transportation	6	14.3
Support	5	11.9
Recruiting	4	9.5
Staffing	2	4.8
Other	2	4.8
None	7	16.7
No response	2	4.8

involvement as a program strength, but that involving parents is difficult. Other barriers included lack of transportation for the children and families, inadequate support from other administrators or outside agencies, and difficulties in recruiting eligible children or limitations placed on recruitment because of eligibility guidelines. About one-fifth of the administrators either reported no barriers to carrying out the program or did not respond to the question.

Year class began. The year each class began was noted from administrator reports. Frequency counts of the beginning years are shown in Table 14. Most of the preschool classes are relatively new; about two-thirds of the classes began in 1988 or later.

Teacher Questionnaires

Type of program. Teachers specified the funding source of their preschool class. Chapter 1 was reported by 82.8% (106), Chapter 1 Even Start by 9.4% (12), U.S. Department of Education Grant Pilot by 6.2% (8), Kenan Model by 2.3% (3), Chapter 2 Pilot by 1.6% (2), and other classifications by 3.1% (4). (Because a few programs were supported by more than one funding source, the total is greater than 100%.)

Demographic characteristics of children. The number of children in each classroom according to sex and race was reported on the teacher questionnaires, as seen in Table 15. About half the students were boys and about half were girls. On the average, slightly under two-thirds of the children in these classes were Black, and slightly over one-quarter were White, with a small percentage of Native American children and children of other races. In racial composition, the ranges within each class varied widely. The total number of children in a class ranged from 9 to 22, with a mean of 15.5.

Teachers were asked to indicate the number of identified handicapped children in the class, the number of "educationally deprived" children in the class, and the number of "at-risk" children in the class not counted in either of the other two categories. These were the labels reported by the state program administrators as the usual labels used for eligibility. However, the instruction to count as "at-risk" only children who were not already in the category "educationally deprived" was apparently not always clear to the teacher respondents, so these numbers should be considered estimates only. The mean number of handicapped children was 0.8 (SD=2.0, range=0-12). The mean number of educationally deprived children was 13.8 (SD=5.1, range=0-22), and the mean number of at-risk children was 4.7 (SD=6.3, range=0-18). The proportion of the class represented by these figures is an average of 4.9% handicapped, 87.1% educationally deprived, and 31.9% at-risk. In addition, 2.3% (3) of the teachers reported the term "identified handicapped" as not applicable, 31.3% (40) reported "educationally deprived" as not applicable, and 5.5% (7) reported "at-risk" as not applicable. Regardless of the terminology, which did seem confusing to some respondents, these results indicate that most of the children in each class were seen by their teachers as somehow at-risk, while less than one child per class, on average, was identified as a child with special needs.

Kindergarten placement. Teachers were asked to specify the placement next year for children in their class who would be old enough for kindergarten. An average of 14.9 children per class were considered to be eligible for kindergarten in the next year, representing 96.8% of all children enrolled in the pre-kindergarten programs statewide. (A few programs enroll a few 3-year-olds, children who will not meet the school birthdate cut-off for kindergarten entry at the end of their preschool year.) Of all the children reported as age-eligible for kindergarten, an average of 13.7 were expected to attend kindergarten (SD=5.0, range=0-22); 1.2 were expected to attend pre-kindergarten or transition

Table 14

Frequency of Administrator Reports of Year Preschool Classes Began

(n=115)

Year	Frequency	Percentage
1976	4	3.5
1985	3	2.6
1986	25	21.7
1987	6	5.2
1988	26	22.6
1989	17	14.8
1990	31	27.0
1991	3	2.6

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Table 15

Teacher Reports of Mean Number of Children by Sex and Race

n=127

Characteristic	Percentage	Mean	SD	Range
Sex				
Male	51.8	8.0	2.2	1-14
Female	48.2	7.4	2.1	3-13
Race				
Black	63.1	9.9	4.8	0-19
White	28.2	4.3	4.2	0-19
American Indian	6.0	0.9	2.6	0-14
Other races	2.7	0.4	0.8	0-4
Total	100.0	15.5	2.4	9-22

kindergarten (SD=3.9, range=0-18); and less than 1 child per class (0.1) was expected to attend other placements (SD=0.6, range=0-5). These figures correspond to 91.4% of the age-eligible children heading to kindergarten, 7.9% to pre-kindergarten/transition kindergarten, and 0.7% to other placements.

Overall, most of the children were expected to attend kindergarten the next year. However, almost 8% of the children were being placed in pre-kindergarten or transition kindergarten classes, thus presenting them with an extra year of pre-kindergarten before they start kindergarten. Table 16 shows the frequency of placements in pre-kindergarten or transition kindergarten by the number of children being placed there. The majority of teachers (88.9%) reported that no children would attend a transitional class. All of the expected transition kindergarten placements were accounted for by 11.1% (14) of the preschool classes. In 7 of the cases, all children in the preschool class were expected to be placed in a transition kindergarten the next year.

Screening tests. Teachers were asked to report which screening instruments or standardized tests were used with the children. As indicated in Table 17, the LAP-D was used by over half the sites. Other tests which were often used included observation-based assessment, the DIAL-R, the PPVT and the Preschool Inventory. Other less frequently utilized tests included EPSF, Brigance, Gesell, and TOBE. Use of at least one other instrument was reported by nearly one-third of the teachers, including locally developed tests, language tests, and other commercial tests.

Times of program operation. Teachers were asked to report the hours of the day, days of the week, and months of the year their program was in operation. In general, the time schedule of these programs looked quite similar to other public school classes. The programs were in operation for an average of 6.1 hours per day (SD=1.5, range=2.5-11). Most of the programs, 92.9% (118), served children Monday through Friday. The other schedules of operation included four days a week, Monday through Thursday (4.7%, 6), and three days a week, Monday through Wednesday (1.6%, 2) or Tuesday through Thursday (0.8%, 1). Programs served children between 8 and 12 months a year, with a mean of 10.0 months (SD=0.9).

Teachers also reported the days of the week and hours of the day a teacher assistant was available. Assistants were available an average of 7 hours each day (SD=0.9, range=3.5-9.0). There was little variation in the hours of availability across the different days of the week. Only seven teachers reported having a second assistant available, and that was for an average of 7.6 hours per day (SD=0.6, range=7.0-8.5).

Teachers were also asked whether before- or after-school care or summer programs were available to the preschool children at their site. Before-school care was available to 18.8% (24) of the classes, after-school care to 32.0% (41), and summer programs to 18.0% (23). However, the majority of preschool programs did not report having care outside of the normal school day, suggesting that the program would not meet many working parents' needs for child care for the full work day.

Meals provided. Teachers indicated which meals were provided to the children by the preschool program. As shown in Table 18, about two-thirds of the sites provided breakfast and about one-third provided morning snack. Lunch was provided at most of the sites and afternoon snack at about half. A very few sites reported no provision of breakfast or lunch by the preschool program, but indicated that meals were available through the school cafeteria, so that children who qualified for free lunch were provided with meals by the school. Other children paid for their meals. Three sites provided no lunch because

Table 16

Frequency of Teacher Reports of Placements of Kindergarten Eligible Children in Pre-kindergarten (Pre-K) or Transition Kindergarten (TK)

n = 126

No. children to attend Pre-K or TK	% children to attend Pre-K or TK	Frequency of Teachers	Percentage of Teachers
0	0	112	88.9
2	11.1	1	0.8
4	22.2-44.4	3	2.4
5	35.7	1	0.8
6	37.5-42.9	2	1.6
15	100	2	1.6
16	100	1	0.8
17	100	1	0.8
18	100	3	2.4

Table 17

Frequency of Teacher Reports of Use of Screening Tests

n = 128

Test	Frequency	Percentage
LAP-D	67	52.3
Observation-based assessment	40	31.3
DIAL-R	30	23.4
PPVT	22	17.2
Preschool Inventory	22	17.2
EPSF	7	5.5
Brigance	4	3.1
Gesell	3	2.3
TOBE	1	0.8
Other	38	29.7

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Table 18

Frequency of Teacher Reports of Provision of Meals by the Preschool Program

n = 128

Meal	Frequency	Percentage
Breakfast	85	66.4
Morning Snack	47	36.7
Lunch	112	87.5
Afternoon Snack	71	55.5

they ran split sessions which lasted 2 1/2 hours each in the morning and the afternoon. Some type of morning meal and afternoon meal was provided at most of the sites. Across these categories, either breakfast, morning snack, or both were served at 86.7% (111) of the sites, and either lunch, afternoon snack, or both were served at 93.8% (120) of the sites.

Preschool consultants or services. Teachers indicated whether or not various types of consultants or services were available to help them or the children in the past year, and also whether or not the services were actually used. In general, services reported as available were sometimes reported as not used, as indicated in Table 19. Speech/language therapy was available to almost all of the programs, and was used by most. More than half the programs had access to psychologists, social workers, early education specialists, parent coordinators, and audiologists, although these services were not always used. Many fewer programs had either physical therapists or occupational therapists available, and very few actually used these services, in accord with teachers' reports of few identified children with special needs in these programs. At least one other type of consultant or service was reported by about one-quarter of the programs, including health and social services, special education services, preschool services, and other services.

Family services. Teachers also reported the availability and use of various types of family services through the preschool program during the past year. Similarly to the consultant services, not all available family services were reported as being used, as shown in Table 20. The majority of sites made parent education and social services available, although they were not used as frequently. Adult education classes were available through less than half of the programs, and used at slightly over one-quarter. Health services and crisis intervention services were reported as available at about one-third of the sites, but less often used. Employment services were provided at 14% of the programs. Infrequently reported other services included broader school-based services such as a guidance counselor, social services, and community services.

Curriculum. Teachers indicated the main and supplementary curricula they used, with up to two responses coded for each. The information on main curriculum is shown in Table 21 and supplementary curriculum in Table 22. *Circle of Childhood* was reported as the main curriculum by most of the teachers. Other curricula were noted much less frequently, including High Scope, language/literacy/reasoning curricula, child-initiated curricula, social development curricula, and other commercial materials or curricula.

The results for the supplementary curricula indicate that more than half the teachers either reported this question as not applicable or did not answer it. The most frequently reported supplementary curricula were other commercial materials or curricula and teacher or teacher-designed resources. Other supplementary curricula included High Scope, Peabody, *Circle of Childhood*, and a small scattering of other types of materials. Across the reports of both main and supplementary curricula, almost 85% of the teachers use *Circle of Childhood*, and about 20% use High Scope.

Parent involvement. Teachers reported the number of children who had at least one parent involved in various activities during the past year. The mean percentage of families who participated in each activity is presented in Table 23. Most of the parents attended parent-teacher conferences and visited the classroom. Over half the parents attended parent meetings and helped in the classroom, while less than half went on field trips. A "two-way conference" was listed as a potential parent involvement activity because the preschool teacher training conducted by DPI features this as a particular type of parent-teacher meeting emphasizing parent communication. However, over half the teachers did not answer this question, suggesting that this term is not common to all public preschool programs. Of the teachers who did respond to the two-way conference item,

Table 19

Frequency of Teacher Reports of Availability and Use of Preschool Consultants and Services
n=128

	Available		Used	
Service	Frequency	%	Frequency	%
Speech/language	122	95.3	109	85.2
Psychologist	84	65.6	33	25.8
Social worker	80	62.5	51	39.8
Early education specialist	77	60.2	69	53.9
Parent coordinator	75	58.6	72	56.3
Audiologist	68	53.1	51	39.8
Physical therapist	32	25.0	3	2.3
Occupational therapist	22	17.2	4	3.1
Other	33	25.8	31	24.2

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Table 20

Frequency of Teacher Reports of Availability and Use of Family Services
n=128

	Available		Used	
Service	Frequency	%	Frequency	%
Parent education	95	74.2	82	64.1
Social services	81	63.3	50	39.1
Adult education	54	42.2	35	27.3
Health services	48	37.5	35	27.3
Crisis intervention	36	28.1	22	17.2
Employment services	18	14.1	12	9.4
Other	11	8.6	10	7.8

Table 21

Frequency of Teacher Reports of Main Curricula Used
n=128

Curriculum	Frequency	Percentage
Circle of Childhood	103	80.5
High Scope	16	12.5
Language/literacy/reasoning	9	7.0
Child-initiated	8	6.2
Social development	6	4.7
Commercial materials	4	3.1
Teacher resources	2	1.6
Developmental activities	1	0.8
No response	1	0.8

Table 22

Frequency of Teacher Reports of Supplementary Curricula Used
n=128

Curriculum	Frequency	Percentage
Commercial materials	17	13.3
Teacher resources	16	12.5
High Scope	10	7.8
Peabody	10	7.8
Circle of Childhood	5	3.9
Language/literacy/reasoning	2	1.6
Math/science	2	1.6
Other teachers	2	1.6
Other	6	4.7
Not applicable	14	10.9
No response	55	43.0

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Table 23

Teacher Reports of Parent Involvement

n=128

Activity	Mean Percentage of Families Involved
Parent-teacher conferences	88.7
Visit the classroom	85.6
Parent meetings	66.6
Help in the classroom	51.2
Go on field trips	40.0
Two-way conferences*	60.4
Other**	74.6

*This question was answered by only 48.4% (62) of the teachers.

**This question was answered by only 20.3% (26) of the teachers.

over half of their families attended. Finally, some teachers reported parent involvement in other activities, such as attending workshops or donating materials, parent-child activities, literacy activities, and attendance during special occasions such as field day or Thanksgiving feast.

Staff development. Teachers were asked to rate how useful they found various types of staff development during the past year, using a 1 to 5 rating scale from not at all useful to very useful. In general, all of these staff development activities were found to be very useful, with mean ratings between 4.4 and 4.8, as seen in Table 24. However, a number of teachers did not participate in many of these activities during the past year, so the usefulness ratings are based on a reduced sample of the teachers. In addition, 13.3% (17) of the teachers described other types of staff development activities they found very useful, such as statewide or national conferences and workshops, and other types of curriculum or program model training.

Best aspects. Similarly to administrators, teachers were asked to describe the three best aspects of their program. These responses were categorized and summarized across the three answers. The most frequently cited aspect by teachers was opportunities for parent involvement (see Table 25). Having a child-initiated or child-centered program was the next most frequently mentioned category. The facilities, including space, materials, or equipment, and the curriculum or activities used were listed among the best aspects by about one-fifth of the respondents. Other categories frequently cited as strengths were the developmental appropriateness of the program, staff commitment and time, and the positive impact of the program on the children and families. Social development, the make-up of the class or the class size, administrative support, and language development were also noted. An assortment of infrequent responses included the adult education provided by the program, funding, transportation, support services, provision of meals, and other aspects, such as the children themselves, assessments, or the provision of a "nurturing environment."

Barriers. Teachers also described three barriers to carrying out their program, as did administrators. These responses were also categorized across all answers (see Table 26). Insufficient parent involvement was the most frequently mentioned barrier (although opportunities for parent involvement was the most frequently cited positive aspect of the programs--see above). Of those teachers who cited parent involvement as a barrier, 27.5% (11) also described it as a positive aspect. These responses are similar to those of the administrators, indicating that some programs find it difficult to involve parents to the extent that the program would like. The importance placed on parent involvement both as a positive aspect and as a barrier suggests the key role played by this component in these preschool programs. The next most frequently mentioned barriers were the physical facilities or materials and support from others connected with the program or from outside agencies. Inadequate funding, problems with staff or constraints on staff time, lack of transportation, and problems with recruiting or the guidelines for recruiting were also mentioned by teachers. A variety of other barriers cited by a few included discipline problems, school system rules and regulations, and the instrument used in classroom evaluations. Slightly over a quarter of the teachers either reported no barriers to carrying out the program or did not answer the question.

Demographic characteristics of staff. Teachers reported the number of years they and their assistants had taught various age groups, as shown in Table 27. In general, teachers were somewhat more experienced than assistants at the lower ages, and had taught for several years, although only a few years had been spent teaching children of preschool age.

Table 24

Teacher Ratings of Usefulness of Staff Development Activities during the Past Year

n = 128

Activity	Mean	SD	Range	Percentage Attending
Pre-K Summer Institute	4.8	0.6	1-5	60.2
Preschool Initiative Network	4.7	0.8	1-5	28.1
Visits to other preschool classes	4.6	0.7	2-5	70.3
Regional meetings	4.6	0.8	1-5	57.8
Local staff development	4.4	0.9	1-5	89.1

Table 25

Frequency of Teacher Reports of Three Best Aspects of the Preschool Program

n = 128

Aspect	Frequency	Percentage
Parent involvement	51	39.8
Child-initiated	32	25.0
Facilities	27	21.1
Curriculum / activities	26	20.3
Developmental appropriateness	22	17.2
Staff	21	16.4
Positive impact	21	16.4
Social development	20	15.6
Class make-up / size	19	14.8
Administrative support	15	11.7
Language development	15	11.7
Adult education	5	3.9
Support services	3	2.3
Funding	3	2.3
Transportation	3	2.3
Meals	2	1.6
Other	10	7.8
No response	6	4.7

Table 26

Frequency of Teacher Reports of Three Barriers to the Preschool Program

n = 128

Barrier	Frequency	Percentage
Parent involvement	40	31.3
Facilities	32	25.0
Support	23	18.0
Funding	17	13.3
Staffing	17	13.3
Transportation	11	8.6
Recruiting	9	7.0
Other	9	7.0
None	14	10.9
No response	20	15.6

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Table 27

Mean Number of Years of Experience Teaching for Preschool Staff

	Teachers n = 128			Assistants n = 133		
Group taught	Mean	SD	Range	Mean	SD	Range
Public preschool program	2.6	2.3	0.5-15	2.2	1.7	0.5-15
3- & 4-year-olds	4.4	4.7	0.5-38	3.0	2.6	0-17
All ages	12.7	7.8	1-34	6.5	5.3	0-25

The highest educational degree earned by teachers and assistants was reported, as seen in Table 28. Almost two-thirds of the teachers had a Bachelor degree and about one-third had a Master degree. More than two-thirds of the assistants had a High School degree, and about one-sixth each had an Associate or Bachelor degree.

The certifications and endorsements held by teachers and assistants were reported, as also shown in Table 28. Most teachers held Early Childhood certification, and almost half had the Pre-K/K Add-on certificate. Other certifications were reported by the teachers, including mentor teacher, degrees or credentials in early childhood education, special education degrees or certifications, and other areas of educational specialization and training they were working on or had completed. Most of the assistants did not hold any certifications or endorsements, but some did have training workshops, teacher assistant certificates, and relevant educational experiences.

Other information contained in Table 28 shows that all but one of the teachers were female, and all but one of the assistant teachers were female. Slightly less than two-thirds of the teachers were White, while about one-third were Black, and a few were Native American. About half the assistants were Black and slightly fewer were White, and a few were Native American or other races. The average age reported for teachers was 38.0 years (SD=9.3, range=23-62), and for assistants was 36.4 years (SD=8.9, range=21-64).

Discussion

Discussion of the results from the survey portion of the study centers around eligibility criteria, logistics issues, resources, curriculum, and training.

Eligibility Criteria and Screening

Selection of children for participation in a school's public pre-kindergarten program can depend on any one (or more) of several factors, with a variety of criteria being used by different LEAs. More than half use screening measures such as the LAP-D, DIAL-R, or PPVT-R. Chapter 1 regulations require that objective criteria be used, although assessments per se are not required. Other objective criteria could be parental educational level or observer ratings. The practice of administering standardized tests to young children has been criticized by NAEYC (1988) and by leading educators (Meisels, 1987). There is no documentation that these practices positively affect children's later academic achievement (Smith & Shepherd, 1987). Standardized tests should be used only when the testing provides information that will clearly contribute to improved outcomes for children.

From our survey, we do not know how the screening results are used after the children are enrolled. For example, are the scores used just as the "gateway" to allow certain children to enter (i.e., the lowest-scoring children) or are they used to objectively assess children's learning needs and plan appropriate instruction for them once they are enrolled in the pre-kindergarten class? The latter would be a recommended use of the screening results. The majority of administrators reported using screening test results as a criterion for admitting children when potential enrollees outnumbered class spaces. Another large percentage reported using level of educational disadvantage which, based on their answers to another question (their definition of "educationally deprived"), is usually defined by a screening test. This indicates to us that a large percentage (65-75%) of public preschool programs are purposefully enrolling those children who seem most to need compensatory education.

Table 28

Demographic Characteristics of Preschool Program Staff

	Teachers n = 128		Assistants n = 133	
Characteristic	Frequency	%	Frequency	%
Education				
Some high school[1]	--	--	1	0.9
High School degree[1]	--	--	79	68.1
Associate degree[1]	--	--	18	15.5
Bachelor degree	78	63.4	17	14.7
Master degree	43	35.0	1	0.9
6-year degree[2]	2	1.6	--	--
Certifications				
Early Childhood (K-4)	90	70.9	4	3.1
K-6	44	34.6	1	0.8
Pre-K/K Add-on	57	44.9	7	5.4
Preschool Handicapped	3	2.4	1	0.8
Child Development Associate[1]	--	--	10	7.7
Other	26	20.5	22	16.9
Gender				
Female	124	99.2	121	99.2
Male	1	0.8	1	0.8
Race				
White	76	61.3	51	42.5
Black	40	32.3	58	48.3
Native American	8	6.5	10	8.3
Other	0	0	1	0.8

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[1] These categories were only asked for assistants.
[2] This category was only asked for teachers.

(This fact bears consideration when examining the expected or realized amount of progress that is made by these public preschoolers.)

Of those programs that use some kind of screening measure, over 30% use an observation-based assessment. This kind of screening strategy may have more ecological validity and could be more helpful in deciding appropriate activities and teaching strategies for individual children. However, more should be known about the conduct of the procedure (i.e, qualifications of those who use it, validity of assessment) before recommending increased use of this in screening children for public pre-kindergarten. The responses to this item on our questionnaire may have indicated that an observation-based assessment was used after a child was enrolled in the pre-kindergarten program in order to best determine the child's educational needs. This certainly would be an element of good teaching practices and is part of the *Circle of Childhood* curriculum.

Logistical Issues

Some of the survey information pertained to the logistics of conducting a program for 4-year-old children. For example, the spaces and playgrounds in elementary school buildings are not always suitable for younger children. Tables, chairs, and playground equipment need to be smaller in size and different kinds of materials are needed (e.g., sand and water tables, dramatic play furnishings). This could explain why facilities were listed most frequently by administrators (36%) as a barrier to carrying out their program and why over 20% of the preschool classes are located in different buildings or separate locations from other elementary grades. Although such a plan segregates the younger children when cross-age interaction is sometimes beneficial, the need for appropriate spaces may be driving these decisions. Designers of new elementary school buildings should take into account these kinds of size and space considerations when designing appropriate spaces for the youngest ages being served.

Transportation for younger-aged children also poses a logistical challenge for schools. With most of the transportation for preschoolers occurring in regular school buses, safety is a major concern. Buses can carry over 40 children, they do not typically have seatbelts, and a child's riding time twice a day can be lengthy. Schools should be concerned about these issues for preschoolers, but no more so than for kindergartners and the other young children served. Those schools using mini-buses and vans for their youngest children are to be commended. Their methods of funding and scheduling this kind of more appropriate transportation should be models for other systems interested in modifying their transportation systems or beginning to transport 4-year-olds.

Another logistical issue concerns times of operation. Most preschool programs operate on the standard school-day model of 8:00 a.m. - 2:30 p.m. with after-school care available to children in about 1/3 of the programs. Parents who work 8:00-5:00 usually need child care for that entire time. This would be true whether the child attended a community-based daycare, Head Start, or a public preschool program. Many schools are already attempting to address the needs of working parents by providing before-school and after-school care for all elementary age groups. To the extent that preschoolers are likely to need this kind of care in the same proportion as their older-grade peers, this is no more of an issue for preschoolers *per se* than for all early grade children. Because parents of "high-risk" children are often targeted for jobs training or re-employment opportunities (sometimes in conjunction with their child's preschool experience), the need to provide full-day or working-day care, beyond the 8:00-2:30 child program, is apparent. Especially if parents successfully obtain employment as a result of the adult-focused component of the preschool program, finding care after 2:30 p.m. should not be an obstacle to their employment. After-school arrangements are not available in about 2/3 of the existing public preschool locations.

Availability of Resources

It is notable that 25% of preschool administrators and 40% of preschool teachers report no access to an early education specialist. Although serving 4-year-olds is a relatively new enterprise for schools, 5-year-olds have been taught in kindergarten for the past 17 years and such specialists should be in place. Starting up new programs is an opportune time to infuse appropriate training, technical assistance, and monitoring. Programs that are in the process of change can more readily be guided into adopting or developing age-appropriate learning settings and teaching strategies. Many LEAs apparently rely on a "curriculum specialist" to span the programmatic needs from preschool to high school. If that person happens to have an early education background and training, the preschool program and teacher have a relevant program resource, but otherwise they often must rely solely on their own resourcefulness. If funds are limited for this kind of early childhood curriculum specialist, another option is for LEAs or schools to adopt a "lead teacher" or "mentor teacher" role whereby an experienced and well-trained early childhood teacher (who could be a preschool, kindergarten, 1st or 2nd grade teacher) is given some time away from classroom responsibilities to be a resource and trainer of other teachers of 4- to 7-year-olds. In addition, some systems have more ready access to the expertise at the regional technical assistance centers, although this, too, seems very limited.

Access to other resources is variable. Speech-language therapy is widely available and used by preschool programs. Psychology, social work, and parent education specialists are available to about half of the programs. Physical therapy and occupational therapy are only available to a small percentage of programs, but are not used much by those programs, so their lack of availability is likely not a problem. Because many of the preschool programs emphasize parent involvement and/or parent education and literacy training, slightly over half of the programs employ a person whose role is to interact with parents. In some cases this person may also be available for parent training at many grade levels, not just the pre-kindergarten. Most of the children attending public pre-kindergarten are from poverty families and many of their parents did not do well in or even complete school themselves. Assuring that the children's first experiences with public school, and the experiences of their parents, are positive is one of the goals of these programs. We assume from the presence of "parent coordinators" that they most directly address these concerns, working in coordination with teachers. This does not, however, relieve individual preschool teachers of the responsibility for interacting positively and appropriately with parents, especially as the preschool year is the child's first introduction to "school," a place in which we want them to be active learners and participants for another 13 years (through high school graduation).

Curriculum and Training

Circle of Childhood is the curriculum used by almost all programs, either as a primary or secondary source. The *Circle of Childhood* manual is intended to be a framework from which a developmentally appropriate program is planned and carried out. Teachers receive training in pre-kindergarten summer institutes prior to each school year and during in-service sessions held throughout the year. This training was the highest rated of the different types of staff development available to pre-kindergarten teachers and would appear to be critical to the successful implementation of a developmentally appropriate program for 4-year-olds. This study did not collect data addressing the extent to which the *Circle of Childhood* written curriculum relates to the training received and how that potentially relates to the quality of the day-to-day program in the classroom. Are some types of training or training on different content areas conducive to more appropriate activities in preschool classes? Do some modalities of training make the written *Circle of Childhood* curriculum easier to understand and implement when a teacher goes back to his or her class and attempts to organize and make changes in room arrangement, materials, or in ways of interacting with the children? These would be fruitful questions for further study and for continued improvement of the pre-kindergarten program.

Another interesting training and supervision concern has to do with the fact that public preschool teachers have taught other age groups for an average of 8 years. Many of these teachers have been trained in and taught in older age groups, some near in age to preschool (i.e., kindergarten) and others farther apart in age (i.e., 5th grade). Are some types of training more effective for older-grade teachers who are becoming pre-kindergarten teachers compared to community child care teachers who are entering the public schools? Do different supervision and monitoring strategies need to be used with teachers who are experienced but not in the particular age group they are now teaching?

In summary, the surveys from administrators and teachers provided much descriptive information about the nature and practices of North Carolina's public preschool classrooms, as well as useful information about the teachers and the at-risk children served. The next phase of the study involved on-site classroom observations conducted in order to more fully describe the activities, teaching procedures, and developmental appropriateness of the preschool programs.

OBSERVATIONS OF PUBLIC PRESCHOOL CLASSES AND TEACHERS' RATINGS OF PRESCHOOL CHILDREN

The second component of the study consisted of observations of a sample of 63 preschool classrooms with teacher ratings of 1022 children in those classrooms in the fall and spring of the children's preschool year. This phase of the study obtained information about the quality and developmental appropriateness of public preschool classrooms and some cognitive and behavioral characteristics of the children who attended them in 1991-92. The data collected during this phase help to answer the research questions about how well the programs were being conducted and the relationship between program quality and short-term child outcomes.

Method

Participants

A total of 63 public preschool classrooms were visited, consisting of 50 standard Chapter 1 classes and 13 classes from four other types of family-focused programs being carried out by the state (Even Start, Chapter 1 Enhancement, Chapter 2, and U.S. Department of Education Grant Pilots). The Kenan Literacy projects were being evaluated by others, so were not included in the observations. As described earlier in this report (see pages 8-9), these other types of programs provided a stronger family-focus than the standard Chapter 1 preschool, through the use of home visits, parent support and education, and parent literacy or jobs training. To be able to compare programs with the additional family support to standard Chapter 1 preschool programs, the study sampled proportionately more family-focused public preschools than standard Chapter 1 preschools for this observation phase of the study. Separate selection procedures were used for the two types of classes.

For the standard Chapter 1 programs, only classes which began in 1990 or earlier were included, allowing them at least one year of operation by the time of the observations. We did not think it would be representative or fair to document a class during its first year. A final sample of 50 classes was drawn from the total sampling pool, comprised of 138 classes from 35 districts. At least one class from each district was included in the final sample in order to maximize geographic representation.

Based on the possibility that districts with more preschool classes might be conducting somewhat different programs than those with fewer classes, and to maintain a proportionally representative sample, each district was listed in one of five categories according to the number of Chapter 1 preschool classes. The five categories and number of districts in each were:

1) 1 class (11 districts),
2) 2 classes (8 districts),
3) 3-7 classes (13 districts),
4) 8-14 classes (2 districts), and
5) 35 classes (1 district).

For districts with one class, that class was included in the final sample (11). For districts with two or more classes, one class was chosen from each district (24) using a random numbers table. For districts with three or more classes, a total of 15 additional classes were randomly chosen. These 15 additional classes were sampled from each category in proportion to the number of classes left in the sampling pool after one class from each district had been chosen. Accordingly, 7 (43%) additional classes were randomly drawn from all the classes in the 3-7 category, 3 (21%) were drawn from the 8-14 category, and 5 (36%) were drawn from the 35 classes category.

This procedure resulted in a total of 50 standard Chapter 1 classes chosen for the final sample. This sample consisted of 11 classes from districts with one class, 8 classes from districts with two classes, 20 classes from districts with 3-7 classes, 5 classes from districts with 8-14 classes, and 6 classes from the district with 35 classes.

For the four types of family-focused classes, one class was randomly chosen for the sample from each district with that type of class. Five districts conducted Even Start programs, operating a total of 15 classes and a range of 1-6 classes per district. One district conducted a Chapter 1 Enhancement program, running three classes. Two districts each had one Chapter 2 class. Five districts each had one U.S. Department of Education Grant Pilot class. The procedure of choosing one class from each district with a family-focused preschool resulted in a total of 13 family-focused classes in the final sample, consisting of five Even Start classes, one Chapter 1 Enhancement class, both Chapter 2 classes, and all five Education Grant Pilot classes.

After selecting the sample of classrooms in the fall of 1991, information about each of the children in these classes was obtained from teachers in the fall and again in the spring of 1992. Although 1022 children have either fall or spring data, both fall and spring data exist on 776 children. Some children present in the fall had moved by the spring; some children transferred into the classes during the year; and there was a small non-return rate by the teachers. These 776 children attended 53 classes, with 639 children from 43 standard Chapter 1 classes and 137 from 10 family-focused classes.

Measures

Classroom observations. Two observational instruments were used during the classroom visits: the *Early Childhood Environment Rating Scale* (Harms & Clifford, 1980) and the *Five-Minute Interaction* (Stallings, 1977). The *Early Childhood Environment Rating Scale* (ECERS) was the primary measure of classroom developmental appropriateness, the measure used to index the overall quality of program. This scale comprehensively assesses the day-to-day care and educational experiences provided to children. The ECERS is widely used in child development research and has been predictive of a number of child development outcomes as described earlier in this report (see pp. 7-8 and also see Phillips & Howes, 1987, for a review of this literature). The ECERS provides a measure of seven areas of classroom environments:

1) Personal care routines,
2) Furnishings and display,
3) Language and reasoning,
4) Fine and gross motor activities,
5) Creative activities,
6) Social development, and
7) Adult needs.

The ECERS consists of a total of 37 items, each scored on a 7-point scale, with descriptions anchored at the odd numbered points on the scale. The scale is designed so that a score of 1 on an item represents an inadequate situation, 3 is minimal, 5 is good, and 7 is excellent. Mean item ratings (i.e., the mean of item scores), which range from 1.0 to 7.0, can also be calculated for the subscale and total scale scores.

Rather than use individual scores from 7 different scales, many researchers use the major factor scores that emerge after conducting factor analysis on the ECERS. For example, the National Child Care Staffing Study, with a sample of 313 preschool classrooms, found two major factors (Whitebook, et al., 1989). The first, **Appropriate caregiving**, captured the items pertaining to child-adult interactions, supervision, and discipline, accounting for 52% of the variance in the ECERS. The second factor (subscale), **Developmentally appropriate activity**, captured the items pertaining to the materials, schedule, and activities of the classroom. It accounted for 48% of the variance in the ECERS. The two scales were highly intercorrelated, r = .78. Table 29 lists the individual ECERS items by NCCSS factor.

The *Five-Minute Interaction* (FMI) records social interactions in the classroom according to the initiator, recipient, and type of interaction across thirteen categories. The recording unit is based on conversational turns, rather than time, so that codes correspond to actual turns or sentences. The categories used in the FMI are:

1) Command/request,
2) Direct question,
3) Open-ended question,
4) Response,
5) Instruction/explanation,
6) General comment,
7) Task-related comment,
8) Acknowledgement,
9) Praise,
10) Corrective feedback,
11) No response,
12) Waiting, and
13) Observing/listening.

(Copies of the rating forms for each of these instruments are included in the Appendix, along with examples of ECERS items and descriptions of category codes for the FMI.)

Table 29

Factor Membership for the Early Childhood Environment Rating Scale Individual Items

Item	NCCSS Factor [1]
Adult Needs Subscale	
Adult personal area	-
Provisions for parents	-
Adult meeting area	-
Professional opportunities	-
Creative Activities Subscale	
Music	Appropriate Caregiving
Creative supervision	Appropriate Caregiving
Creative schedule	Appropriate Caregiving
Sand/water	Developmentally Appropriate Activities
Blocks	Developmentally Appropriate Activities
Art	Developmentally Appropriate Activities
Dramatic play	Developmentally Appropriate Activities
Fine/Gross Motor Subscale	
Gross motor time	-
Fine motor activities	Developmentally Appropriate Activities
Gross motor supervision	Appropriate Caregiving
Fine motor supervision	Appropriate Caregiving
Gross motor space	-
Gross motor equipment	-
Social Development Subscale	
Exceptional child provisions	-
Group time	Appropriate Caregiving
Tone	Appropriate Caregiving
Free play	Appropriate Caregiving
Space to be alone	Developmentally Appropriate Activities
Cultural awareness	Developmentally Appropriate Activities
Personal Care Subscale	
Nap/Rest	Appropriate Caregiving
Greeting/departing	Appropriate Caregiving
Meals/snacks	Appropriate Caregiving
Personal grooming	-
Toileting	Appropriate Caregiving
Furnishings/Display Subscale	
Furnishings for relaxation	Developmentally Appropriate Activities
Display	-
Furnishings for routine care	-
Room arrangement	Developmentally Appropriate Activities
Furnishings for learning activities	Developmentally Appropriate Activities
Item	
Language/Reasoning Subscale	
Using language	Appropriate Caregiving
Understanding language	Appropriate Caregiving
Informal language	Appropriate Caregiving
Reasoning	Appropriate Caregiving

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[1] Factors from the National Child Care Staffing Study (Whitebook, Howes, & Phillips, 1989).

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To analyze the *Five Minute Interaction* data, factor analysis was conducted of the data from observations of all 63 classes. This yielded three orthogonal teacher factors: **Teacher Directiveness** which included commands/requests, general comments, and task-related comments; **Child-oriented language** which consisted of open-ended questions, responses, and praise; and **Non-elaborative language** which included direct questions and acknowledgements. The child language data from the FMI were also factor analyzed, but the factors derived did not have sufficient internal consistency to be used for further analysis.

Child assessments. At the time of the observations, teachers were asked to complete two developmental assessments for each child in the class: one on communication development and one on social behavior. An adapted questionnaire form of the Communication Domain of the *Vineland Adaptive Behavior Scale* (Sparrow, Balla, & Cicchetti, 1984) was used to provide a measure of children's cognitive development. The Vineland is designed to be used with children birth to age 18, and has been standardized across these ages with a mean of 100 and a standard deviation of 15. The raw scores also correspond to age equivalents, which give additional information about where individuals stand with regard to their chronological age.

The *Adaptive Social Behavior Inventory* (ASBI) (Hogan, Scott, & Bauer, 1992) provided information about children's social development. This instrument consists of 30 items in three subscales: Express, Comply, and Disrupt. These items represent developmentally appropriate social behaviors for children in approximately the 2- to 4-year-old range, including normative negative behaviors on the Disrupt subscale. The Express scale contains items that reflect initiating social behaviors and emotionally expressive qualities. Comply contains items that reflect responsive and cooperative behaviors. Disrupt contains items that are slightly negative in emotional tone, but nevertheless are normative for many young children. The scoring on this scale was modified for the purposes of this study, so that each item was rated from 1 to 6, rather than 1 to 3, with 1 labelled as never and 6 as always. In addition, eight questions about children's attitudes toward school adapted from *The Teachable Pupil Attribute Scale* (Kornblau & Keogh, 1980) were added to the end of the latter form. All eight of these items consisted of positive behaviors. (Copies of these instruments are contained in the Appendix.)

Procedures

Classroom observations. One observation was conducted in each classroom between October 1991 and January 1992, except for three of the family-focused preschool classes (the education grant pilots) which were visited in July and August, 1991. The classroom visits were conducted by experienced assessors, who were highly qualified in observational research and the use of the ECERS. They also trained for about 30 hours on the FMI using videotapes and live observations in local daycare classrooms. In addition, the project coordinator conducted two reliability visits with each assessor to obtain measures of the interrater reliability on the observational instruments.

Each classroom visit was approximately four hours long, with the assessor arriving early in the morning, usually before class began, and staying throughout the morning. During this time, the quality of the classroom environment was rated using the ECERS. Social interactions between teachers and children were coded at six points during the day using the FMI, with each segment lasting five minutes. During each segment, either the teacher's language toward children or children's language toward the teacher was coded. Teacher language was coded in four five-minute segments: twice during center time, once during meal time, and once during large group time. Child language was coded during two five-minute segments: once at center time and once at meal time.

Child ratings. At the time of the classroom visits, teachers were given rating forms for each child and asked to complete them within two weeks. Instructions were contained on each form, and the classroom assessor and/or project coordinator were available to answer any questions.

Results

Early Childhood Environment Rating Scale

In order to examine the inter-rater reliability, Pearson correlation coefficients were calculated between the project coordinator's and the assessors' scores for the six classes visited together. Correlations for the ECERS overall mean score, the mean score on the child items, and the mean subscale scores were computed. Correlation coefficients ranged from .69 to .93, with a median correlation of .85. The correlations were quite high for the overall mean (.93) and for the child items (.91). For the subscales alone, the median correlation was .83, with a range from .69 to .93.

Coefficient alphas were computed for the ECERS subscales, the child items, and the total scale, in order to examine internal consistency. As seen in Table 30, the coefficient alphas for the child items and the total scale were quite high, indicating that the internal consistency is good. The alphas for the subscales ranged from .29 to .86. The lowest coefficient alpha was found on the adult needs subscale, while those measuring child-related items were much higher.

Coefficient alphas were also computed for the ECERS factor scores, which were the primary analysis variables. The coefficient alphas were 0.89 for the Appropriate caregiving factor and 0.77 for the Developmentally appropriate activities factor.

The means for ECERS items, subscales, and the overall score for the complete sample of 63 classes are contained in Table 31. Separate sets of means for the 50 standard classes and the 13 family-focused classes are shown in Tables 32 and 33, respectively. Within tables, subscales are presented from highest-scored to lowest; within each subscale, items are also listed highest to lowest. We considered an overall score of 5.0 or above on the ECERS to be indicative of a good, developmentally appropriate classroom, based on both the design of the scale and agreement of the item descriptions with other works, such as the NAEYC statement on developmentally appropriate practices (Bredekamp, 1987). Scores within half a point of 5.0 (that is, 4.5-4.9) were considered "close to the target." That is, for this and other studies, we have considered 5.0 to be the criterion score to be considered developmentally appropriate, with classrooms above that mark to be applauded and those below the mark to be encouraged to make some classroom changes.

For the complete sample, the overall score on the ECERS was just below the target (4.8). When separate scores were examined for the standard and family-focused classes, the overall score for the family-focused classes met and exceeded the criterion (5.2), while the standard classes did not (4.7). This difference between standard and family-focused classes was statistically significant [$t(61) = 2.29, p < .03$]. However, the overall scores for both the complete sample and the standard classes were still in close range of the target score. In the total sample, 38% (24) of the classes scored 5.0 or above overall, 27% (17) scored between 4.5 and 4.9, and the remaining 35% (22) scored below 4.5. These proportions were quite similar for the standard classes, with 34% (17) meeting the criterion, 28% (14) close to criterion, and 38% (19) below this range. More than half

Table 30

Internal Consistency of ECERS Subscales and Total Scale

n=63 classes

Subscale	Coefficient Alpha
Personal Care	0.52
Furnishings	0.69
Language	0.86
Fine/Gross Motor	0.76
Creative Activities	0.70
Social Development	0.73
Adult Needs	0.29
Total Child Items	0.93
Total Scale	0.92

Table 31

Mean Ratings on the Early Childhood Environment Rating Scale All Classes

n=63

Item	Mean	SD	Range
Adult personal area	6.4	1.1	2-7
Provisions for parents	5.7	0.7	3-7
Adult meeting area	5.5	1.2	3-7
Professional opportunities	3.9	1.9	2-7
Adult Needs Subscale	**5.4**	**0.7**	**3.8-6.8**
Music	5.9	0.6	5-7
Creative supervision	5.8	1.0	3-7
Creative schedule	5.7	1.3	1-7
Sand/water	5.1	1.0	3-7
Blocks	4.9	1.7	2-7
Art	4.7	1.8	1-7
Dramatic play	3.7	0.9	3-7
Creative Activities Subscale	**5.1**	**0.7**	**3.4-6.9**
Gross motor time	5.7	1.3	3-7
Fine motor activities	5.6	1.4	2-7
Gross motor supervision	5.3	0.9	4-7
Fine motor supervision	5.1	1.2	3-7
Gross motor space	4.3	0.9	3-7
Gross motor equipment	3.7	1.0	1-7
Fine/Gross Motor Subscale	**4.9**	**0.8**	**3.0-6.8**
Exceptional provisions	5.7	1.4	2-7
Group time	5.3	1.5	1-7
Tone	5.2	1.3	2-7
Free play	5.0	1.5	1-7
Space to be alone	3.9	1.4	1-7
Cultural awareness	3.1	0.8	2-7
Social Development Subscale	**4.7**	**0.9**	**3.0-7.0**
Nap/Rest	5.8	1.1	3-7
Greeting/departing	5.4	1.1	1-7
Meals/snacks	4.6	1.2	2-7
Personal grooming	4.1	0.8	2-7
Toileting	3.4	2.2	1-7
Personal Care Subscale	**4.7**	**0.8**	**3.3-6.8**
Furnishings for relaxation	5.7	1.5	3-7
Display	4.6	1.3	3-7
Furnishings for routine care	4.5	2.0	1-7
Room arrangement	4.4	1.5	1-7
Furnishings for learning activities	4.1	2.0	1-7
Furnishings/Display Subscale	**4.6**	**1.1**	**2.6-7.0**
Using language	4.5	1.4	3-7
Understanding language	4.4	1.2	2-7
Informal language	4.3	1.6	2-7
Reasoning	4.1	1.3	2-7
Language/Reasoning Subscale	**4.3**	**1.1**	**2.5-7.0**
Total Child Items	**4.8**	**0.7**	**3.3-6.4**
Overall	**4.8**	**0.7**	**3.5-6.4**

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Table 32

Mean Ratings on the Early Childhood Environment Rating Scale
Standard Chapter 1 Classes

n=50

Item	Mean	SD	Range
Adult personal area	6.6	0.9	4-7
Provisions for parents	5.6	0.7	3-7
Adult meeting area	5.4	1.2	3-7
Professional opportunities	3.9	1.8	2-7
Adult Needs Subscale	**5.4**	**0.7**	**3.8-6.8**
Music	5.9	0.6	5-7
Creative supervision	5.8	1.0	3-7
Creative schedule	5.6	1.3	1-7
Sand/water	5.1	0.9	3-7
Blocks	4.7	1.6	2-7
Art	4.6	1.7	1-7
Dramatic play	3.6	0.7	3-7
Creative Activities Subscale	**5.0**	**0.7**	**3.4-6.4**
Gross motor time	5.6	1.2	3-7
Fine motor activities	5.4	1.5	2-7
Gross motor supervision	5.2	0.9	4-7
Fine motor supervision	5.0	1.2	3-7
Gross motor space	4.3	0.8	3-7
Gross motor equipment	3.5	1.0	1-6
Fine/Gross Motor Subscale	**4.8**	**0.8**	**3.0-6.5**
Exceptional provisions	5.6	1.4	2-7
Group time	5.2	1.5	1-7
Tone	5.0	1.3	2-7
Free play	4.8	1.5	1-7
Space to be alone	3.8	1.3	1-7
Cultural awareness	3.1	0.8	2-7
Social Development Subscale	**4.6**	**0.9**	**3.0-7.0**
Nap/Rest	5.6	1.1	3-7
Greeting/departing	5.3	1.1	1-7
Meals/snacks	4.6	1.0	3-7
Personal grooming	4.0	0.7	2-7
Toileting	3.1	2.1	1-7
Personal Care Subscale	**4.5**	**0.7**	**3.3-6.3**
Furnishings for relaxation	5.5	1.5	3-7
Display	4.5	1.3	3-7
Furnishings for routine care	4.4	2.0	1-7
Room arrangement	4.3	1.6	1-7
Furnishings for learning activities	3.9	1.9	1-7
Furnishings/Display Subscale	**4.5**	**1.0**	**2.6-6.4**
Using language	4.3	1.4	3-7
Informal language	4.3	1.6	2-7
Understanding language	4.2	1.0	2-7
Reasoning	4.0	1.3	2-7
Language/Reasoning Subscale	**4.2**	**1.1**	**2.5-7.0**
Total Child Items	**4.7**	**0.7**	**3.3-6.2**
Overall	**4.7**	**0.7**	**3.5-6.3**

Table 33

Mean Ratings on the Early Childhood Environment Rating Scale
Family-focused Classes

n = 13

Item	Mean	SD	Range
Provisions for parents	6.0	0.6	5-7
Adult personal area	5.8	1.7	2-7
Adult meeting area	5.8	1.2	4-7
Professional opportunities	3.9	2.1	2-7
Adult Needs Subscale	**5.4**	**0.8**	**4.0-6.8**
Music	6.0	0.6	5-7
Creative supervision	5.9	1.0	5-7
Creative schedule	5.8	1.4	4-7
Blocks	5.6	1.8	2-7
Sand/water	5.5	1.1	3-7
Art	5.0	2.0	2-7
Dramatic play	4.2	1.4	3-7
Creative Activities Subscale	**5.4**	**0.8**	**4.3-6.9**
Fine motor activities	6.2	0.7	5-7
Gross motor time	5.8	1.4	4-7
Gross motor supervision	5.6	1.0	4-7
Fine motor supervision	5.5	1.2	4-7
Gross motor space	4.6	1.2	4-7
Gross motor equipment	4.4	1.0	4-7
Fine/Gross Motor Subscale	**5.3**	**0.7**	**4.3-6.8**
Nap/Rest	6.5	0.9	4-7
Greeting/departing	5.7	1.3	4-7
Meals/snacks	4.6	1.7	2-7
Toileting	4.6	2.3	1-7
Personal grooming	4.5	1.1	4-7
Personal Care Subscale	**5.2**	**1.0**	**4.0-6.8**
Furnishings for relaxation	6.5	1.2	3-7
Furnishings for learning activities	4.9	2.2	1-7
Display	4.8	1.4	3-7
Furnishings for routine care	4.8	2.2	2-7
Room arrangement	4.8	1.2	3-7
Furnishings/Display Subscale	**5.2**	**1.3**	**3.4-7.0**
Exceptional provisions	6.2	1.1	4-7
Group time	5.8	1.5	3-7
Tone	5.8	1.4	4-7
Free play	5.4	1.3	3-7
Space to be alone	4.4	1.4	3-7
Cultural awareness	3.2	1.0	2-6
Social Development Subscale	**5.1**	**0.7**	**4.2-6.5**
Using language	5.2	1.4	3-7
Understanding language	5.0	1.7	3-7
Informal language	4.5	1.5	3-7
Reasoning	4.5	1.4	2-7
Language/Reasoning Subscale	**4.8**	**1.3**	**3.0-7.0**
Total Child Items	**5.2**	**0.7**	**4.3-6.4**
Overall	**5.2**	**0.7**	**4.4-6.4**

(54%, 7) of the family-focused classes met the criterion, with 23% (3) close, and 23% (3) below this range. It is worth noting that no classes scored below 3.5 and none of the family-focused classes were rated below 4.0. Figure 1 presents a frequency distribution of the ECERS total scores for the 50 standard Chapter 1 and 13 family-focused public preschool classes.

Considering the subscale scores for the complete sample (see Table 31), two of the subscales met the target level of 5.0: Adult needs and Creative activities. Four subscales were within half a point: Fine/gross motor, Social development, Personal care, and Furnishings/display. Only one subscale, Language/reasoning, was not within range of the criterion. When the scores for the standard classes alone were examined (see Table 32), the same picture was found as for the overall sample. In contrast, the 13 family-focused classes received somewhat higher ratings (see Table 33). These differences were significant for two of the subscales, Personal care [$t(61) = 2.69$, $p < .009$] and Fine/gross motor [$t(61) = 2.18$, $p < .03$]. The criterion was met on all the subscales but Language/reasoning, which was slightly below 5.0. Figure 2 presents the means on the ECERS subscales for the standard and family-focused classes.

Examination of the ECERS factor scores showed significant differences between the standard and family-focused classes. Scores for family-focused classes were higher for Appropriate caregiving [$t(61) = 2.24$, $p < .03$] and Developmentally appropriate activities [$t(61) = 2.56$, $p < .01$].

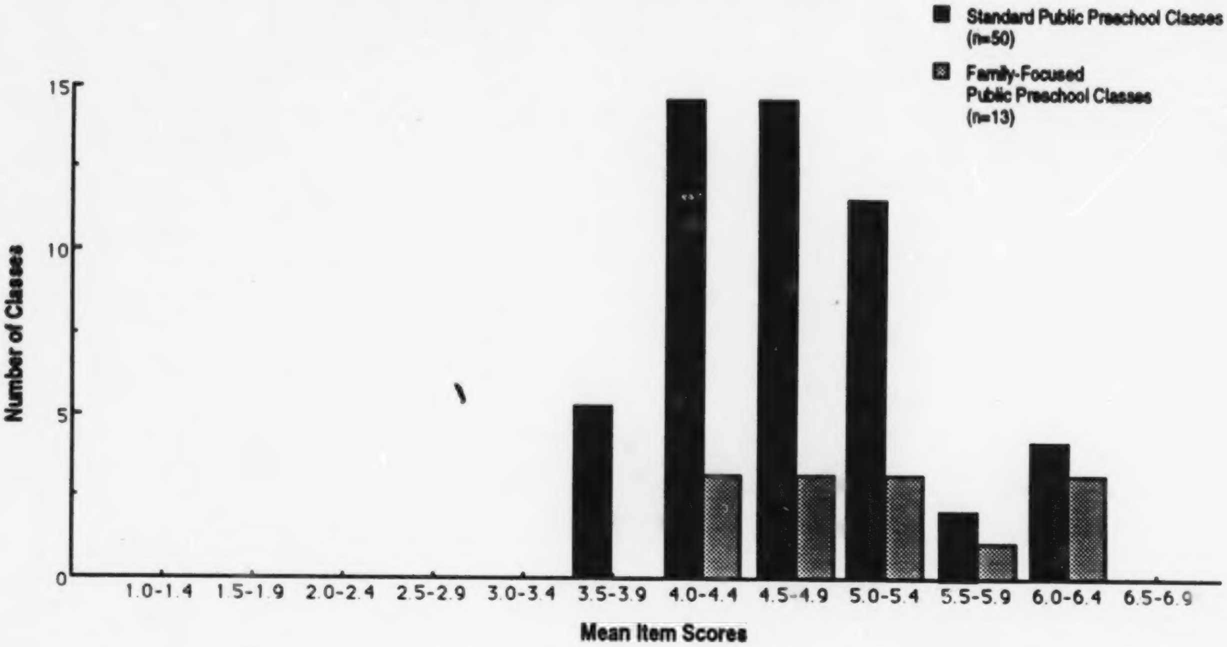
For all three sample groupings, more than half of the individual items on the ECERS either met the criterion or were close. For the complete sample, the mean scores on 49% (18) of the items met the target, while another 16% (6) were close. Similar figures were found for the standard classes, with 46% (17) of the items reaching criterion and 14% (5) close. A larger proportion of items met the target or were close to it for the family-focused classes, 59% (22) and 27% (10), respectively. Conversely, the mean scores for 40% of the items in the standard classes were below criterion range for developmental appropriateness, while only 14% were low in the family-focused classes.

The full range of scores from 1 to 7 was found for most items, although for several items no classes scored at the lower end of the scale. The range for the family-focused classes was narrower than for the standard Chapter 1 classes, with fewer items covering the lower range of scores. Low-rated items were found across the different subscales. Cultural awareness was consistently the lowest scoring item on the scale, with a mean score just reaching minimal (3.0). Toileting was also a low-scoring item for the standard classes, but was considerably higher for the family-focused classes. Gross motor equipment, dramatic play, furnishings for learning activities, and professional opportunities tended to be low items also, although scores were generally higher for the family-focused classes than the standard Chapter 1 programs.

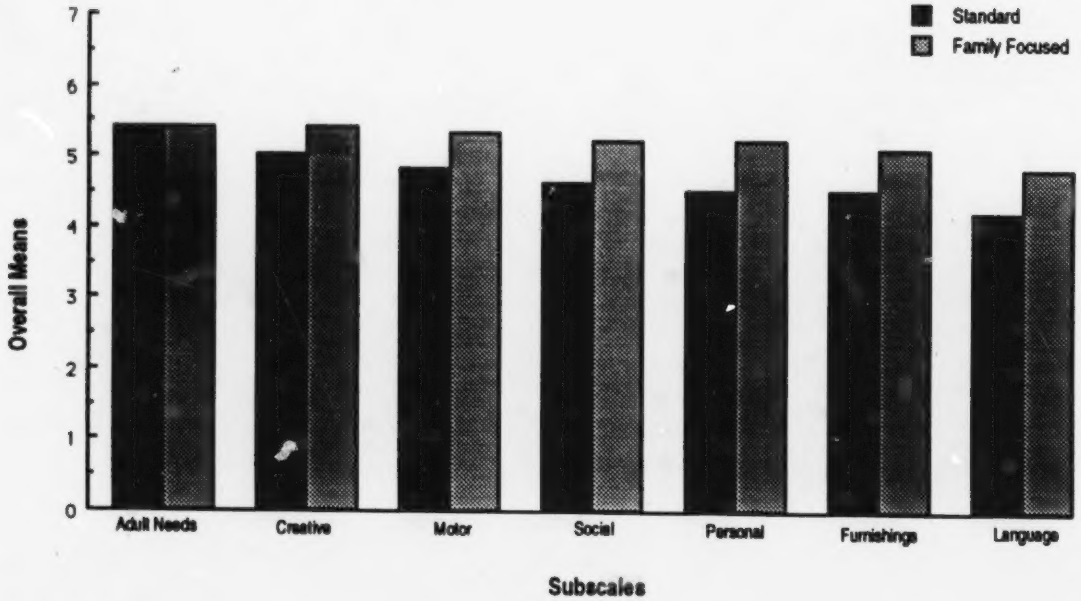
A regression analysis examined whether there were any effects of the number of preschool classes in a district on ECERS scores. The overall mean ECERS score was the dependent variable and the number of preschool classes in the district was the independent variable. There were no significant effects for either the total number of preschool classes (standard Chapter 1 and family-focused) or the total number of standard Chapter 1 classes only.

The relationship between ECERS scores and a number of demographic variables based on information from the 1991 teacher surveys was also examined in a series of univariate regression analyses. The survey variables included the number of years of teacher experience in that preschool program, the number of years teaching 3- and/or

Distribution of ECERS Scores



Mean ECERS Subscale Scores for Standard and Family-Focused Public Preschool Classes



4-year-olds, the total number of years teaching, the number of parents involved in various classroom activities (visiting, helping, going on field trips, attending parent-teacher conferences, and attending parent meetings), and the number of children in the class by gender, ethnicity, and total. No significant relationships were found between ECERS scores and any of these teacher or classroom variables.

In addition, two primary demographic characteristics of the school were used to predict classroom quality--the county population and whether the school was urban or rural. Neither of these characteristics were significantly related to ECERS total or factor scores.

Five-Minute Interaction

In order to examine the interrater reliability on the Five-Minute Interaction, Pearson correlation coefficients were calculated between the project coordinator's and the assessors' codes for the six classes visited together. Correlations for the number of codes in each category and the total number of codes were computed within each activity separately for teacher and child language. Correlations ranged from 0 to .998, with a median correlation of .82. Interrater reliability was inadequate for seven categories which had correlation coefficients near 0. These included four categories of teacher language (instructions/explanations and general comments during centers, and open-ended questions and responses during meals), and three categories of child language (general comments and observing/listening during centers, and acknowledgements during meals). These unreliable categories are marked in the subsequent tables, and were not used in further analyses. For the most part, these categories included very low frequency verbal events, which accounts for the low reliability coefficients. The category of instruction/explanation accounts for about 16% of the responses, but was not reliable because, after training to reliability, one of the three observers began to differ from the other two in her interpretation of this code.

Coefficient alphas were computed on each of the FMI teacher and child factors. These were within acceptable ranges for the teacher language factors, but were low for the child language factors. Therefore, only the teacher language factors were used in further analyses. The coefficient alphas for the teacher factors were 0.70 for Teacher directiveness, 0.48 for Child-oriented language, and 0.53 for Non-elaborative language.

Five-Minute Interaction data for teacher and child language is reported by activity (centers, meal, and large group) in Tables 34 and 35. Within each activity type, the percentage of teacher language within each coding category is presented for the overall sample, the standard classes, and the family-focused classes (Table 34). Child language proportions are presented similarly in Table 35.

Comparisons of the standard and family-focused classes indicate that the interaction patterns of teachers as assessed by the FMI were quite similar in both types of classes. There were no statistically significant differences between the two groups. During centers, teachers asked direct questions more frequently than any other type of verbal behavior. Task-related comments and acknowledgements were also frequent occurrences. Although instructions or explanations by teachers were also often observed during center time, this category was not reliably coded by observers. During meal time a very similar distribution of teacher verbal behavior was found, although teachers more frequently issued commands or requests during this activity than during the other events that were observed. The pattern was somewhat different during large group or "circle time," with teachers most often providing instructions or explanations, while direct questions were the second most frequent type of language.

Table 34

Mean Percentage of Five-Minute-Interaction Codes by Activity for Teacher Language

	All Classes n=63		Standard Chapter 1 n=50		Family-Focused n=13	
Codes	Mean Percent	(SD)	Mean Percent	(SD)	Mean Percent	(SD)
Centers						
Direct question	22.6	(7.1)	22.8	(6.7)	21.9	(8.6)
Task-related comment	18.6	(10.0)	19.1	(10.0)	16.8	(10.1)
*Instruction/explanation	16.1	(10.5)	15.8	(10.0)	17.4	(12.7)
Acknowledgement	12.7	(6.8)	12.7	(6.7)	12.8	(7.1)
Command/request	8.1	(5.8)	8.2	(5.9)	7.8	(5.5)
Open-ended question	4.9	(5.5)	5.1	(5.6)	4.0	(5.4)
Corrective feedback	4.6	(5.6)	4.8	(5.8)	3.6	(4.8)
Response	4.1	(3.9)	3.5	(3.0)	6.3	(5.7)
Praise	3.6	(3.6)	3.3	(3.1)	4.9	(4.8)
*General comment	2.5	(2.6)	2.6	(2.7)	2.1	(2.0)
Observing/listening	2.1	(3.6)	2.0	(3.8)	2.5	(2.9)
No response	0		0		0	
Waiting	0		0		0	
Meal time						
Direct question	26.7	(12.8)	27.8	(12.6)	21.7	(13.0)
Task-related comment	18.4	(10.4)	17.7	(10.3)	21.6	(11.0)
Acknowledgement	13.9	(8.9)	13.5	(8.5)	15.7	(10.6)
Command/request	11.5	(12.8)	11.6	(12.9)	11.0	(12.6)
Instruction/explanation	8.4	(8.3)	8.6	(8.5)	7.4	(7.4)
Corrective feedback	5.8	(8.0)	6.4	(8.6)	3.1	(4.3)
*Response	5.2	(6.3)	4.7	(5.0)	7.8	(10.4)
General comment	4.7	(7.0)	4.7	(6.8)	4.8	(8.1)
*Open-ended question	2.8	(5.6)	2.4	(5.0)	4.6	(7.5)
Observing/listening	1.3	(2.7)	1.5	(2.9)	1.0	(3.2)
Praise	1.0	(2.2)	1.0	(2.3)	0.8	(1.9)
Waiting	0.2	(1.5)	0.1	(0.6)	3.2	(1.1)
No response	0		0		0	
Large Group						
Instruction/explanation	28.7	(14.0)	29.3	(13.8)	26.1	(15.1)
Direct question	21.6	(11.0)	20.9	(11.4)	24.3	(9.3)
Task-related comment	14.0	(8.2)	14.8	(8.3)	10.7	(7.0)
Acknowledgement	14.0	(8.4)	14.0	(8.6)	14.0	(7.9)
Command/request	7.5	(8.0)	7.1	(8.2)	9.2	(7.6)
Corrective feedback	5.4	(5.3)	5.0	(5.1)	6.7	(6.3)
Open-ended question	4.2	(5.3)	4.2	(5.2)	4.4	(6.2)
Praise	1.9	(2.7)	1.9	(2.7)	2.1	(2.7)
Response	1.2	(3.4)	1.1	(3.5)	1.8	(3.3)
General comment	1.2	(1.9)	1.3	(2.0)	0.7	(1.1)
Observing/listening	0.3	(1.0)	0.3	(1.1)	0	
No response		0		0	0	
Waiting		0		0	0	

*Coding was unreliable for these categories.

Table 35

Mean Percentage of Five-Minute-Interaction Codes by Activity for Child Language

	All Classes n=63		Standard Chapter 1 n=50		Family-Focused n=13	
Codes	Mean Percent	(SD)	Mean Percent	(SD)	Mean Percent	(SD)
Centers						
Task-related comment	32.6	(14.9)	33.4	(14.4)	29.2	(17.2)
Response	31.4	(14.4)	30.8	(12.9)	33.7	(19.8)
Command/request	11.2	(8.7)	11.2	(8.9)	11.2	(8.5)
Direct question	9.8	(8.7)	9.7	(7.9)	10.1	(11.7)
*General comment	6.4	(9.8)	6.7	(10.4)	7.3	(10.1)
Instruction/explanation	4.2	(7.6)	3.5	(6.8)	5.0	(6.9)
Acknowledgement	3.2	(5.8)	3.4	(6.3)	2.4	(3.1)
*Observing/listening	0.9	(2.7)	1.0	(3.0)	0.9	(1.6)
Open-ended question	0.3	(1.1)	0.1	(0.9)	0.2	(0.7)
No response	0.1	(0.7)	0.2	(0.7)	0	
Corrective feedback	0		0		0	
Praise	0		0		0	
Waiting	0		0		0	
Meal time						
Task-related comment	35.8	(20.9)	38.8	(20.1)	32.1	(26.3)
Response	33.4	(21.2)	33.8	(19.8)	25.2	(20.8)
General comment	10.0	(12.9)	8.9	(12.6)	14.1	(13.9)
Direct question	9.0	(11.4)	7.9	(10.3)	13.0	(14.5)
Command/request	5.7	(8.7)	5.9	(8.5)	5.1	(9.7)
*Acknowledgement	2.4	(4.8)	2.5	(5.2)	2.1	(3.5)
Open-ended question	1.7	(8.9)	0.2	(1.1)	6.6	(18.5)
Instruction/explanation	1.6	(5.4)	1.6	(5.9)	1.8	(3.7)
Observing/listening	0.2	(1.4)	0.2	(1.5)	0	
Corrective feedback	0.1	(0.7)	0.2	(0.8)	0	
Waiting	0.1	(0.5)	0.1	(0.6)	0	
Praise	0		0		0	
No response	0		0		0	

*Coding was unreliable for these categories.

Task-related comments and acknowledgements were also frequent occurrences. In general, very few of teachers' interactions consisted of open-ended questions, averaging about 5% or less during each of the events coded. Both corrective feedback and praise were also infrequent occurrences, although the former occurred more often than the latter.

Comparisons of the standard Chapter 1 and family-focused classes in Table 35 indicate a similar pattern of child language across these two types of classes as well. During center time, children primarily made task-related comments and responded to questions. These two types of language accounted for almost two-thirds of the events coded. Commands or requests and direct questions by children each accounted for 10-11% of the interactions. Task-related comments and responses were the most frequent codes during meal time also, although the order was reversed for the family-focused classes compared to the standard Chapter 1. General comments and direct questions were the next most frequent categories of language, although they occurred much less often than the previous two categories.

Combined Analyses of ECERS and FMI

The correlations between the ECERS total, the ECERS factors, and the FMI factors were computed (see Table 36). FMI Teacher directiveness was significantly negatively related to all of the ECERS measures. FMI Child-oriented language was positively related to the Appropriate caregiving factor. FMI Non-elaborative language was positively correlated with the ECERS Total, Developmentally appropriate activities, and Appropriate caregiving.

Multivariate regression analyses were conducted to examine further the relationship between ECERS scores and FMI codes. Separate analyses were conducted for teacher language and child language. The overall mean ECERS score was the independent variable, and selected Five-Minute Interaction categories were the dependent variables. Only categories which were conceptually related to ECERS scores and which had sufficiently high inter-rater reliabilities were tested, in order to allow generalization to the larger population of public preschool classes.

For teacher language, the dependent measures tested were the total number of commands/requests, direct questions, open-ended questions, responses, task-related comments, acknowledgements, praise, and corrective feedback. The overall model was significant [$F(8,54)=5.71$, $p<.0001$], and a subset of the FMI variables tested were significantly related to ECERS scores. The mean ECERS score significantly predicted three of the categories: commands/requests [$F(1,61)=27.03$, $p<.0001$], open-ended questions [$F(1,61)=9.57$, $p<.003$], and corrective feedback [$F(1,61)=11.84$, $p<.001$]. Correlational analyses revealed that ECERS scores were negatively related to commands/requests ($r=-.53$, $p<.0001$) and corrective feedback ($r=-.30$, $p<.02$), and were positively related to open-ended questions ($r=.49$, $p<.0001$). In other words, the teachers in classes with higher ECERS scores used fewer commands/requests, less corrective feedback, and asked more open-ended questions. No other FMI codes for teacher language were significantly related to ECERS scores.

The dependent measures for the analyses of child language were the total number of direct questions, open-ended questions, responses, instructions/explanations, task-related comments, and acknowledgements. The overall model was significant [$F(6,55)=3.62$, $p<.004$], and a subset of the FMI variables tested were significantly related to the overall ECERS score. ECERS scores were significant predictors of two of these variables: responses [$F(1,60)=6.91$, $p<.01$]) and instructions/explanations [$F(1,60)=4.35$, $p<.04$]. Correlational analyses indicated that ECERS scores were positively related to

Table 36

Correlations of ECERS Total and Factor Scores with FMI Factor Scores

	Five-Minute Interaction		
	Teacher Directiveness	Child-oriented Language	Non-elaborative Language
Early Childhood Environment Rating Scale			
Total	-0.28****	NS	0.24***
Developmentally appropriate activities	-0.22***	NS	0.25***
Appropriate caregiving	-0.28****	0.26***	0.19**

Significance levels for correlations:

* $p < .05$
** $p < .01$
*** $p < .001$
**** $p < .0001$

both responses ($r = .32, p < .01$) and instructions/explanations ($r = .26, p < .04$). This finding indicates that children in classes with higher ECERS scores spent more time responding to teachers' questions and/or requests, and providing instructions or explanations to teachers. No other five-minute interaction codes for child language were significantly related to ECERS scores.

Effects of Program Type on Classroom Quality

A series of ANOVAs were run to examine the differences in classroom quality measures by type of program. Four categories of program type were used: 1) standard Chapter 1, 2) Education Grant Pilots, 3) Even Start, and 4) the Chapter 1 Enhanced and Chapter 2 classes. Quality measures included the ECERS factors (Developmentally appropriate activities and Appropriate caregiving) and the FMI teacher factors (Teacher directiveness, Child-oriented language, and Non-elaborative language). Post-hoc pairwise comparisons using Tukey's honestly significant difference of the means for program type were made.

A significant difference on the ECERS Developmentally appropriate activities factor was found [$F(3,59) = 3.77, p < .02$]. Post-hoc contrasts revealed that this difference was due to higher scores for the Education Grant Pilot classes in comparison to the standard Chapter 1 classes. No differences were found for any of the FMI factors.

Child Ratings

Tables 37, 38, and 39 present data from the teacher ratings of the public preschoolers during their preschool year. Table 37 includes comparisons by type of preschool, Table 38 by gender, and Table 39 by ethnicity. Only children with both fall and spring ratings are included. These are summarized in the domains of cognitive and social development.

Cognitive development. Children were approximately 55 months of age in the fall when their teachers rated their communication skills on the Vineland; in the spring they were approximately 60 months old. Scores increased from the fall to the spring. Although the time between fall and spring ratings was approximately 5 months, these Vineland communication ratings showed approximately 9-10 months growth.

Differences between the scores for children in the family-focused and the Chapter 1 classes were tested for children on whom there were both fall and spring ratings (see Table 37). Children in the family-focused classes were rated significantly higher on the Vineland Communication Domain than were children in the standard classes in the fall [$t(746) = 7.63, p < .0001$] and in the spring [$t(746) = 1.92, p < .05$]. Children in the family-focused classes were also significantly younger at the time of the fall ratings by almost two months [$t(161) = 3.57, p < .0005$]. These differences were not significant at the spring ratings, most likely due to the shorter time period over which the ratings were filled out in the spring compared to the fall.

Differences at both assessment periods by gender and ethnicity were also examined for children with both fall and spring ratings (see Tables 38 and 39). Although they were not different in age, girls were rated significantly higher than boys on the Vineland in both the fall [$t(746) = 3.89, p < .0001$] and the spring [$t(746) = 3.73, p < .0002$]. Although they, too, were not different in age, white children were rated higher than non-white children in the fall [$t(746) = 5.28, p < .0001$], but not in the spring. The ratings of both ethnic groups increased over the preschool year, but the ratings of non-white children increased more.

Table 37

Means (SDs) of Teacher Ratings of Children in All (n=776), Standard (n=639), and Family-Focused (n=137) Public Preschool Classrooms[1]

	Fall			Spring		
	All Classes	Standard	Family-Focused	All Classes	Standard	Family-Focused
Chronological age (months)	54.7 (4.3)	55.0 (3.8)	53.1*** (5.8)	59.7 (4.3)	59.9 (3.9)	59.0 (5.6)
Vineland Communication Domain						
Standard score	76.4 (14.0)	74.7 (13.3)	84.4**** (14.3)	82.6 (13.4)	82.2 (13.6)	84.6* (12.5)
Age equivalent[2] (months)	36.1	34.9	41.1	45.6	45.4	46.7
Adaptive School Behavior Inventory						
Comply	4.4 (0.8)	4.3 (.9)	4.6** (1.0)	4.6 (0.9)	4.6 (.9)	4.8** (.9)
Express	4.6 (0.8)	4.5 (.8)	4.9**** (.8)	4.9 (0.7)	4.8 (.7)	5.1**** (.6)
Disrupt	2.5 (1.1)	2.6 (1.1)	2.2*** (1.1)	2.5 (1.2)	2.6 (1.2)	2.2**** (1.0)
Attitude to School	4.6 (0.9)	4.6 (.9)	4.9**** (.8)	5.0 (0.8)	4.9 (.9)	5.1*** (.7)

---

[1] Only children with both fall and spring data are included here.
[2] This value was not tested for difference between groups.

Significance levels for t-tests of difference between Standard and Family-Focused classes:

* $p < .05$
** $p < .01$
*** $p < .001$
**** $p < .0001$

Table 38

Means (SDs) of Teacher Ratings of Girls (n=351) and Boys (n=423) in Public Preschool Classrooms[1]

	Fall		Spring	
	Girls	Boys	Girls	Boys
Child's chronological age (mo.)	54.5 (4.3)	54.8 (4.3)	59.6 (4.4)	59.8 (4.2)
Vineland Communication Domain				
Standard score	78.6 (13.8)	74.6**** (13.9)	84.6 (13.1)	81.0*** (13.4)
Age equivalent[2] (in months)	37.7	34.7	47.1	44.4
Adaptive School Behavior Inventory				
Comply	4.5 (.9)	4.2**** (1.0)	4.8 (.8)	4.5**** (.9)
Express	4.7 (.8)	4.5** (.8)	5.0 (.7)	4.8** (.7)
Disrupt	2.4 (1.1)	2.6 (1.1)	2.4 (1.1)	2.6 (1.2)
Attitude to School	4.7 (.8)	4.5**** (.9)	5.1 (.8)	4.8**** (.9)

---

[1] Only children with both fall and spring data are included here.
[2] This value was not tested for difference between groups.

Significance levels for t-tests of difference between Girls and Boys:

* $p < .05$
** $p < .01$
*** $p < .001$
**** $p < .0001$

Table 39

Means (SDs) of Teacher Ratings of Non-white (n=550) and White (n=224) Public Preschool Children[1]

	Fall		Spring	
	Non-white	White	Non-white	White
Child's chronological age (mo.)	54.7 (4.2)	54.5 (4.5)	59.7 (4.2)	59.7 (4.4)
Vineland Communication Domain				
Standard score	74.7 (13.7)	80.5**** (13.7)	82.2 (13.7)	83.6 (12.7)
Age equivalent[2] (in months)	34.8	39.1	45.2	46.5
Adaptive School Behavior Inventory				
Comply	4.4 (1.0)	4.3 (.9)	4.7 (.9)	4.6 (.9)
Express	4.6 (.8)	4.6 (.8)	4.9 (.7)	4.9 (.7)
Disrupt	2.5 (1.2)	2.5 (1.0)	2.5 (1.2)	2.5 (1.2)
Attitude to School	4.6 (.9)	4.7 (.8)	4.9 (.8)	5.0 (.8)

---

[1] Only children with both fall and spring data are included here.
[2] This value was not tested for difference between groups.

Significance levels for t-tests of difference between Non-white and White children:

* $p < .05$
** $p < .01$
*** $p < .001$
**** $p < .0001$

Social development. Mean item scores on the ASBI subscales and the attitude to school items were calculated for the entire sample, as well as separately for children in the standard and family-focused classes. In general, scores on the two prosocial scales on the ASBI were higher than on the Disrupt subscale. The mean item scores on the eight attitude to school items were within the same range as the prosocial subscale. Scores on the two prosocial subscales and the attitude to school items increased from the fall to the spring, while scores on the Disrupt subscale remained the same.

Children in the family-focused classes were rated significantly higher by their teachers in their adaptation to school at both rating times, fall and spring, in comparison to children in the standard Chapter 1 classes (see Table 37). Differences were tested for children on whom there were both fall and spring ratings. Children in the family-focused classes were rated significantly higher on the Comply subscale [fall: $t(772) = 3.17, p < .002$; spring: $t(773) = 2.82, p < .005$], the Express subscale [fall: $t(772) = 4.39, p < .0001$; spring: $t(227) = 5.19, p < .0001$], and the attitude to school items [fall: $t(766) = 3.89, p < .0001$; spring: $t(239) = 3.46, p < .0006$]. Children in the standard classes were rated higher on the Disrupt subscale [fall: $t(771) = 3.31, p < .001$; spring: $t(220) = 4.05, p < .0001$].

Differences by gender and ethnicity in ratings of social development were also examined (see Tables 38 and 39). Girls scored significantly higher than boys at both time periods on the Comply subscale [fall: $t(771) = 5.03, p < .0001$; spring: $t(768) = 4.72, p < .0001$], the Express subscale [fall: $t(772) = 2.88, p < .004$; spring: $t(774) = 3.01, p < .003$], and the Attitude to school items [fall: $t(766) = 3.89, p < .0001$; spring: $t(774) = 4.36, p < .0001$]. There were no gender differences on the Disrupt subscale. For comparisons by ethnicity, there were no significant differences in the ratings of white vs. non-white children on any of the ASBI subscales or the attitude to school measure.

Relationship of Preschool Year Outcomes to Classroom Quality

A series of hierarchical linear mixed model analyses were performed to examine the associations between measures of preschool classroom quality and children's outcomes in their preschool year. The quality measures included the overall ECERS mean and the two NCCSS ECERS factors (Developmentally appropriate activities and Appropriate caregiving) and the three FMI teacher factors (Teacher directiveness, Child-oriented language, and Non-elaborative language). The child measures consisted of fall and spring teacher ratings of communication development (Vineland standard scores) and social development (ASBI Comply, Express, and Disrupt subscales, and Attitude to school items). Analyses examined the relationship of the quality measures to children's spring outcomes, using the fall scores as covariates, and adjusting for mean differences related to gender, ethnicity (defined as white vs. non-white children), and SES (defined as children receiving free or reduced-price lunch vs. those paying full price). The public preschool class was included as a random variable to adjust for within-classroom effects. (This corrected for differences in the numbers of children included in these analyses from each preschool class, ranging from 5-18). These data were first tested using the full model that included each of these main effect terms, as well as the interactions of quality with gender and with ethnicity, gender with ethnicity, and quality by gender by ethnicity. The model was then iteratively reduced, deleting the nonsignificant quality interaction terms.

Children's outcomes as measured by the Vineland were significantly related to one of the ECERS factors, Appropriate caregiving. There was a significant main effect of quality [$F(1, 655) = 3.74, p < .05$], as well as significant two-way interactions with gender [$F(1, 655) = 7.22, p < .007$] and race [$F(1, 655) = 5.49, p < .02$], and a significant three-way interaction of quality by gender by race [$F(1, 655) = 5.19, p < .02$]. These findings indicate that quality had the strongest positive effect on outcomes for white girls, with a less strong effect for white boys. The effects of quality on outcomes for non-white children were weaker, with a positive relationship for non-white girls and a negative relationship for non-white boys.

For the ASBI Comply subscale, there were no relationships to quality as measured by the ECERS or the FMI. For the Express subscale, there were significant main effects of quality and a quality by race interaction for both the ECERS mean [$F(1, 682) = 4.72$, $p < .03$; $F(1, 682) = 5.96$, $p < .01$] and Developmentally appropriate activities [$F(1, 682) = 5.14$, $p < .02$; $F(1, 682) = 7.68$, $p < .006$]. These results indicated that better quality classrooms led to higher ASBI Express scores at the end of the year for white children, but not for non-white children. There were no relationships between the ASBI Express subscale and the FMI factors. For the Disrupt subscale, there was a main effect for the FMI Child-oriented language factor [$F(1, 612) = 5.08$, $p < .02$] and an interaction with SES [$F(1, 612) = 7.38$, $p < .007$], indicating that classes where more child-oriented language occurred resulted in higher Disrupt scores for middle-class children but not for poor children. There were no other significant effects for the Disrupt subscale.

For the attitude to school measure, there was a significant quality by ethnicity interaction for the Developmentally appropriate activities factor [$F(1, 676) = 4.96$, $p < .03$]. However, the main effect for this measure of quality was not significant, indicating that quality did not relate to attitude to school scores overall, but that there was a significant difference in the direction of effects for white and non-white children. There was a slight positive relationship between classroom quality and scores on this measure at the end of the school year for white children, but not for non-white children. There was no main effect but an interaction of the FMI Child-oriented language factor with gender $F(1, 607) = 7.20$, $p < .008$, indicating that there was a differential impact of quality for boys and girls, so that there was a slight positive relationship between child-oriented language of the teacher and outcomes for girls but not for boys.

Discussion

Classroom Observations

The ratings on the ECERS indicate that overall, the majority of these public preschool classes are carrying out or are within close range of developmentally appropriate practices. More than one-third of the entire sample met the criterion, while about one-quarter scored within half a point. In general, the family-focused classes were somewhat more developmentally appropriate than the standard classes, although the two groups overlapped in range. Compared to standard Chapter 1 classes, a higher proportion of the family-focused classes were rated in the top range of the ECERS and fewer were rated in the bottom range. In fact, no family-focused class was rated below 4.0, while 10% of the standard classes were rated this low.

Why might the family-focused classes have been somewhat more developmentally appropriate than standard Chapter 1 classes? Few of the special activities that were implemented by the family-focused preschools (i.e., literacy training or parenting groups) would have, in and of themselves, resulted in higher ratings on specific ECERS items. Teachers and programs that planned for these parent involvement activities may have been more knowledgeable about or experienced in conducting developmentally appropriate preschools. Alternatively these programs may have had more resources with which to stock or staff their programs than the standard Chapter 1 class. Given that the group of family-focused classes consisted of some hybrid-like programs, usually with different additional funding sources, the special nature of these programs and their potential extra resources may be the explanation for the somewhat higher developmental quality ratings in these classes. Most of the subscales met or were close to the criterion for developmental appropriateness. The one exception was Language/reasoning, which was the lowest scoring subscale for all groups. Given the critical nature of language development at this age, this would seem to be an important area to target for improvement. However, low-rated items were found across all subscales, suggesting that there is need for improvement in a number of specific areas, rather than in only one subscale area. In the standard classes, 40% of the individual items had mean scores below the close-to-criterion cutoff (4.5), while only 14% of the items in the family-focused classes scored this low. Some especially low items included toileting, gross motor equipment, dramatic play, furnishings for learning activities, and professional opportunities. Cultural awareness was consistently the lowest scoring item, indicating that all classes need attention to this area.

More positively, over half the items met or were close to the criterion for developmental appropriateness. The range of scores for each of the individual items included the maximum score (7), suggesting that not only is it possible to reach the goal of developmental appropriateness, but some sites are doing an excellent job in particular areas. More items met the criterion in family-focused classes than in standard classes, another indication of their slightly higher level of developmental appropriateness.

The differences in quality among classes were not related to the number of preschool classes in the district, nor to a variety of demographic characteristics, such as teacher experience, parent involvement, number of children in the class, or distribution of children by gender or ethnicity. This finding may be due to the fact that these programs are located in areas that are similar in one important way--they all wanted to and chose to invest resources in new, model programs for 4-year-olds. All districts participating in this study must have considered public preschool a relatively high priority and therefore the other differences that might have existed between districts were less influential. A comparison of quality measures among preschools of different types showed only that the Education Grant Pilot preschools were significantly better on some measures than were the standard Chapter 1 classes. Given the small numbers involved in this comparison, this result should be interpreted cautiously.

The observations of teacher-child interactions indicated that different patterns were found during each major type of classroom activity, as would be expected, but that teachers in family-focused and standard classes were not different. While the additional resources, support, or training provided in the family-focused classes may have resulted in more developmental appropriateness as measured by a more global rating like the ECERS, they do not appear to have affected more discrete variables such as categories of teacher language as measured by the FMI. Moreover, these classes were not significantly different from one another on the language subscale of the ECERS, which was uniformly low. Teachers' verbal behavior with children is perhaps a more stable characteristic and less subject to change than how they arrange rooms or schedules, or plan centers or activities.

In general, teachers asked many direct questions and very few open-ended questions. However, a positive relationship was found between ECERS scores and the frequency of open-ended questions, so that in classes that were rated more developmentally appropriate, teachers asked more open-ended questions. Teachers in higher-rated classes also issued fewer commands or requests to the children, and engaged in less corrective feedback of children's behavior. The children in more developmentally appropriate classes responded more frequently to teachers' questions, commands, or feedback, and gave more instructions or explanations to teachers. Thus, the pattern of interaction in higher quality classes seemed to be less teacher-directed, which in turn may have encouraged greater responsiveness on the part of children.

Child Assessments

Teacher ratings of communicative development indicated that these public preschool children were functioning well below the norm in the fall and the spring of their preschool year. The mean scores for this group were about 1 to 1-1/2 standard deviations below the norm. Looking at it another way, the cognitive age equivalent for this group was about 33% below their chronological age in the fall, and about 25% below in the spring. The mean age equivalent score on the Vineland was about the 3-year-old level compared to an actual age of about 4-1/2 years old in the fall, and just below the 4-year-old level in the spring compared to an actual age of 5 years old. Given that these programs are designed to serve children at-risk for school failure, this finding was to be expected, although the magnitude of the delay seems serious. Even though children showed gains from fall to spring that exceeded their increase in chronological age, they were still functioning at a delayed level.

The fall ratings also showed that girls were rated higher than boys on communication, prosocial behavior and attitudes to school. Although earlier reviews of studies comparing male and female performance on intellectual tasks found sex differences in verbal ability (Maccoby & Jacklin, 1974), current research does not (see Hyde & Linn, 1988 for a review). Our sample is relatively young, clearly at the low end of the verbal-ability continuum, and is relatively homogeneous as to SES. Under these circumstances, perhaps it is more likely that a small gender effect can be observed.

White children were rated higher than non-whites on communication skills in the fall, but not on any of the social skills or attitude to school measures. Race or ethnicity is known to be a significant source of variance in children's achievement at all grade levels (e.g., Coleman, et al., 1966, Alexander & Entwisle, 1988) although the gap between black and white children does appear to be narrowing (Burton & Jones, 1982). Because of the selection factors used to enroll children into the public preschool programs, most were likely to be from families at some economic disadvantage. However, we do not know that the black and white families were similarly disadvantaged. White children in this sample were also more likely to have attended a family-focused preschool, a setting also related to higher Vineland communication ratings.

Children in the family-focused classes were rated higher than those in the standard classes, suggesting that there may have been some differences in the children chosen for these two types of classes or in teacher perceptions across these two groups. On the other hand, children had participated in these classes for about 2-4 months by the time of the fall ratings. Therefore, the fall ratings may also reflect some early impact of the preschool program, with greater early gains by children in the family-focused programs.

By the spring, however, the two groups were more similar, although still significantly different. The Vineland communication scores of the family-focused preschoolers remained the same, while the scores of the standard classroom preschoolers were considerably higher than they had been in the fall. These children made about a 10-month developmental gain in the 5-6 months between fall and spring ratings. Since they enrolled with a lower score, the standard classroom preschoolers had more room to improve than did the family-focused children, although this alone probably cannot account for the large gain. In converse, the children in the family-focused classes did not show any gains beyond their chronological increases in age. Within the first two months of preschool, these children showed a higher developmental level than children in standard classes and maintained that same level. They may also have been somewhat different from the children in the standard classes in family background and family interest in education. The family-focused classes required parent participation of some type (e.g., in educational or parenting classes or in literacy training). Parents who chose to enroll themselves and their children in such a program may have been a more highly motivated group of parents, both in terms of their own and their child's education. Therefore, the impact of the preschool programs on the children's development may have been less significant for children in the family-focused classes than for children in the standard classes.

Interestingly, while non-whites scored lower than whites in the fall on the Vineland, by the spring teachers saw no differences between the two groups. Both were perceived to have improved over the course of the year, about 7 months for white children and about 10 months for non-whites. Again, because non-whites enrolled with lower scores, they had more room to improve, and teachers did perceive growth in the language domain.

Children's adaptation to school based on teacher ratings of social development was also higher in the family-focused classes than the standard classes. In general, children's scores in both types of classes were much higher on the prosocial subscales and the attitude to school items than those on the negative behavior subscale. Teachers tended to perceive these children as demonstrating more positive and fewer negative behaviors at school. Children's scores on the prosocial measures increased slightly from fall to spring, while scores on the negative behavior scale remained constant. This finding suggests that teachers saw children as improving their positive interaction skills over the course of the year, but the normative negative behaviors did not change.

The ASBI is designed for children from about 2 to 4 years old. Since the average age of children in these classes was about 4-1/2 years old in the fall and almost 5 years old in the spring, or near the upper end of the range for which the scale is designed, high scores on the prosocial and low scores on the negative subscales would be expected. However, the mean scores were still about 1-1/2 standard deviations below the maximum in the case of the prosocial items, and about 1-1/2 standard deviations above the minimum for the negative subscale. While there were some individual children who received maximum scores on the scale, the group as a whole would seem to be somewhat delayed in their social as well as cognitive development.

A few statistically significant relationships were found between measures of classroom developmental appropriateness and specific measures of children's outcomes in the spring of their preschool year: overall quality (two different indices) with the verbal expressiveness of white children; appropriate caregiving with Vineland communication ratings, stronger for girls than boys and white children than non-white; and increased child-oriented language of teachers with children's disruptiveness, for children not receiving free or reduced-price lunches. Among the non-white children, there was also a tendency for their attitude to school to be higher if they were in more developmentally appropriate classes. However, given the number of statistical analyses conducted, these findings should be interpreted with caution. The average classroom quality rating in this sample was higher than in any previous study we have conducted and perhaps the overall higher level of developmental appropriateness (and lack of any really low-scoring classes) made it less likely to find associations between quality and specific child measures after only 8 months of preschool.

This section has summarized results from the in-class observations of 63 public preschool classes and the teachers' ratings of children in those classes. The next section concerns the research phase in which children's development and social skills in kindergarten were related to the developmental appropriateness of their program and compared to the progress of other children from disadvantaged families who attended other types of group programs.

ASSESSMENT AND TEACHER RATINGS OF PRESCHOOL GRADUATES IN KINDERGARTEN

The third component of this study consisted of a follow-up of a random sample of public preschool graduates when they were in kindergarten (in the 1992-93 school year) compared to three other randomly selected groups of their classmates: children who attended Head Start, children who attended other community child care programs, and children who attended no center-based group care. This phase of the study was intended to investigate the longer-term impact on school-age developmental outcomes of public preschool compared to other types of care usually experienced by children from poor families.

Method

Participants

Sample selection was conducted in two phases. First, a random sample of 276 public preschool graduates from the observed preschool classes was chosen, including both the standard and family-focused classes. Then, comparison samples of children from the same kindergarten classes were chosen based on information provided by the kindergarten teacher about status of lunch purchase (free, reduced-, or full-price) and their care situation in the year prior to kindergarten (Head Start, community group daycare, no group care). Only children receiving free or reduced-price lunches were included in the comparison samples because most children in the public preschool group were also receiving subsidized meals. This variable was the only available proxy variable for family socioeconomic status (SES) and we wanted to equate our samples (as much as possible) on the basis of family SES. The numbers of children randomly selected in the other groups were 97 in Head Start, 99 in community daycare, and 120 in no group care. A total of 592 children were seen in kindergarten.

Although we initially presumed that almost all of the public preschool graduates would be eligible for free or reduced-price lunch, 56 were not. While 276 randomly selected public preschool graduates participated in the kindergarten data collection, results will be presented in this section for only the 220 children presumed to be from low-income families.

From each public preschool class observed in the second data collection stage, we randomly selected 3 boys and 3 girls for follow-up in kindergarten. For every set of 3 boy and 3 girl public preschool graduates selected, we then selected, within the same LEA, 1 boy and 1 girl Head Start graduate, 1 boy and 1 girl who attended community daycare, and 1 boy and 1 girl who attended no group daycare before kindergarten. The sampling pool for the comparison groups consisted of all the participating kindergarten classes in the LEA which enrolled public preschool graduates from the observed classes.

Demographic characteristics of these groups of children are presented in Table 40. About half of each group were boys, although the family-focused group was comprised of more girls. The majority of children were black with the Head Start group containing the highest proportion of black children. The mean age of children was slightly older than 5-1/2 years.

Table 40

Demographic Characteristics of Kindergartners with Different Preschool Experiences

	Standard[1] Chapter 1 (n=186)	Family-[1] focused (n=34)	Head Start (n=97)	Community Daycare (n=99)	No Group Care (n=120)
Gender, % male	50.5	35.3	50.5	46.5	48.3
Ethnicity, %					
Black	75.8	67.6	89.7	67.7	62.2
White	20.4	26.5	10.3	30.3	34.5
Native American	2.7	5.9	0	2.0	0.8
Asian	0.5	0	0	0	0.8
Hispanic	0.5	0	0	0	1.7
Mean age, mo.	68.4	68.9	68.6	68.6	68.4

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[1] The public preschool children who paid full price for lunches are not included in this table.

Measures

Child assessments. Two subscales of the *Woodcock-Johnson Tests of Achievement* (WJ-R) (Woodcock & Johnson, 1989) were used to provide a standardized assessment of children's abilities in two basic skills areas, reading and math. For the kindergarten age group, the items on these subscales include knowledge and skills that are prerequisites to the abilities to read and calculate, such as letter identification, correspondence between symbols and pictures, and simple counting. This recent revision of the Woodcock-Johnson was standardized nationally with acceptable reliability and validity. The WJ-R provides both age- and grade-standardized scores with a mean of 100 and a standard deviation of 15. Form A was used for this study.

The *Peabody Picture Vocabulary Test-Revised* (PPVT-R) (Dunn & Dunn, 1981) is a nonverbal, multiple-choice test that evaluates receptive knowledge of vocabulary, and can be used from age 2-1/2 to adulthood. The PPVT-R requires no reading ability; children only have to point to the picture that corresponds to a word spoken by an examiner. The PPVT-R is standardized with a mean of 100 and standard deviation of 15. Form L was used for this study.

Teacher ratings. Kindergarten teachers were asked to complete two developmental assessments for each child in their class who was randomly selected to be part of this follow-up phase: one on communication development and one on social behavior. An adapted questionnaire form of the Communication Domain of the *Vineland Adaptive Behavior Scale* (Sparrow, Balla, & Cicchetti, 1984) was used to provide a measure of children's cognitive development. The Vineland is designed to be used with children birth to age 18, and has been standardized across these ages with a mean of 100 and a standard deviation of 15. The raw scores also correspond to age equivalents, which gives additional information about where individuals stand with regard to their chronological age.

The *Social Skills Questionnaire* (version for elementary school teachers) (Gresham & Elliott, 1990) was used to measure teachers' ratings of children's classroom behaviors. It contains 3 scales: Social Skills, Problem Behaviors, and Academic Competence. This questionnaire has been used on a national sample of 4,170 children including all geographic regions and 27% minority representation. Test-retest reliabilities for the elementary school version were 0.85 for social skills, 0.84 for problem behaviors, and 0.93 for academic competence. Internal consistency alpha coefficients were 0.94 for social skills, 0.88 for problem behaviors, and 0.95 for academic competence.

Procedures

Five assessors were trained to administer the child assessments in a day-long training session at the FPG Center and then in individualized practice. Assessors were required to administer the measures to several young children and then to be observed by a licensed psychologist familiar with these measures to determine that the administration followed standard procedures and was scored accurately. If the psychologist was not certain that the assessor was ready to independently conduct assessments in the schools, the assessor was asked to practice on more children and to be observed again later. Assessors were blind to the child's lunch purchase status and prior preschool experience.

The principal and teachers at each participating school received a letter explaining the study. The Project Director (ESPF) contacted all the participating schools to determine their willingness to participate. If they agreed, an assessor was assigned to that school, contacted the teacher, and scheduled a convenient time to visit the school. Visits were made between November, 1992 and January, 1993. Assessors usually saw children for

20-30 minutes, meeting them in class and asking for their assent to participate. The testing area was usually an available office or the corner of the media center. The WJ-R was administered first, followed by the PPVT-R. Children were thanked for their participation and given a sticker.

After a child's individual assessment was completed, the teacher was given the rating forms to complete on that child and asked to mail them back to the researchers in a pre-addressed, stamped envelope. Each teacher was paid $5.00 per child for completing and returning the questionnaires. Questionnaires were returned by 87% of the teachers.

Results

Table 41 summarizes the child outcomes for the individual assessments and teacher ratings by preschool group (standard public preschool, family-focused public preschool, Head Start, community child care, no group child care). In general, children in all groups performed about 1 standard deviation below the population mean on most measures. The scores of children who attended community child care before kindergarten were consistently slightly better than the scores of children in the other four groups. The scores of children who did not attend group care were usually the lowest. Table 42 summarizes these same outcomes by gender and ethnicity (white vs. non-white). In general, girls tended to score higher than boys and white children higher than non-white.

Group Differences in Kindergarten Outcomes

Analyses of variance were conducted to examine the relationship between type of preschool experience (standard or family-focused public preschool, Head Start, community daycare, and no group care) and children's outcomes in kindergarten. Dependent measures included scores on individual assessments (PPVT-R and WJ-R) and teacher ratings (Vineland and Social Skills Questionnaire). The model included gender and ethnicity (white or non-white) as covariates. Children in the public preschool groups who were not receiving free or reduced-price lunches in kindergarten ($n = 56$) were excluded from these analyses in order to make the five analysis groups relatively similar on the basis of SES. Post hoc contrasts using Tukey's HSD were conducted for all significant effects.

Significant group effects were found for the PPVT-R, with all the groups (standard, family-focused, Head Start, and community daycare) performing better than children in the no day care group, and community daycare children also performing better than children in the standard and Head Start groups [$F(4, 529) = 7.11$, $p < .0001$]. There were also significant effects for ethnicity, with white children scoring higher than non-white children [$F(1, 529) = 46.99$, $p < .0001$]. No effects were found for gender.

For the WJ-R Reading scale, there were no effects for preschool group or ethnicity. There were significant differences by gender, with girls scoring higher than boys, $F(1, 529) = 24.36$, $p < .0001$. Significant main effects were found for preschool group on the WJ-R Math scale, with the community daycare sample scoring higher than the four other groups [$F(4, 529) = 4.47$, $p < .002$]. Gender and ethnicity were also significantly related to WJ Math scores. Girls scored higher than boys [$F(1, 529) = 11.38$, $p < .0008$], and white children scored higher than non-white [$F(1, 529) = 5.44$, $p < .02$].

On the teacher ratings, significant preschool group differences were found on the Vineland Communication Domain, with community daycare children rated higher by their kindergarten teachers than children in the other four groups [$F(4, 485) = 5.43$, $p < .0003$]. Girls were rated higher on Vineland communication skills than boys [$F(1, 485) = 15.49$, $p < .0001$].

Table 41

Means (SDs) of Kindergarten Child Outcomes by Preschool Group[1]

	Standard Chapter 1	Family-focused	Head Start	Community Daycare	No Group Care
Child Assessments					
Number of children	186	34	97	99	120
Peabody Picture Vocabulary Test-R	78.6 (14.1)	81.1 (10.8)	77.7 (11.5)	85.5 (13.6)	76.4 (15.6)
Woodcock-Johnson					
Reading	93.3 (11.1)	94.6 (10.1)	92.6 (11.6)	96.3 (12.0)	93.6 (10.6)
Math	79.7 (12.7)	79.0 (11.9)	80.3 (14.0)	85.1 (14.8)	77.7 (13.8)
Teacher Ratings					
Number of children	174	32	90	87	111
Vineland Communication Domain	75.2 (14.4)	73.9 (12.9)	76.9 (17.1)	83.1 (16.8)	73.6 (15.0)
Social Skills Questionnaire					
Social Skills	38.2 (10.4)	37.7 (10.0)	38.7 (10.9)	42.3 (11.5)	37.9 (11.4)
Academic Competence	26.1 (9.0)	25.5 (10.0)	27.1 (9.4)	30.9 (9.6)	26.1 (9.8)
Problem Behaviors	10.4 (6.8)	10.6 (6.8)	10.8 (6.5)	9.2 (6.9)	9.8 (6.8)

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[1] The 56 public preschool children who paid full price for lunches are not included in this table.

Table 42

Means (SDs) of Kindergarten Child Outcomes by Gender and Ethnicity[1]

	Boys	Girls	White	Non-white
Child Assessments				
Number of children	262	277	128	408
Peabody Picture Vocabulary Test-R	78.9 (15.2)	79.8 (12.9)	86.4 (15.0)	77.1**** (13.0)
Woodcock-Johnson				
Reading	91.4 (11.2)	96.2**** (10.7)	93.9 (10.8)	93.8 (11.3)
Math	78.4 (12.9)	82.1** (14.2)	82.4 (13.4)	79.6* (13.8)
Teacher Ratings				
Number of children	241	254	122	373
Vineland Communication Domain	73.7 (14.3)	79.1**** (16.5)	78.9 (16.3)	75.7 (15.4)
Social Skills Questionnaire				
Social Skills	36.5 (11.0)	41.3**** (10.5)	40.0 (10.9)	38.6 (11.0)
Academic Competence	25.5 (8.9)	28.5*** (9.8)	28.1 (9.4)	26.8 (9.5)
Problem Behaviors	11.7 (7.2)	8.7**** (5.9)	10.1 (6.6)	10.2 (6.8)

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[1] The 56 public preschool children who paid full price for lunches are not included in this table.

Significance levels for tests of the differences by gender and ethnicity.
*$p < .05$
**$p < .01$
***$p < .001$
****$p < .0001$

There was also a significant effect for ethnicity, with white children rated higher than non-white children [$F(1, 485) = 4.00, p < .05$].

Differences by preschool group were found on the Social Skills scale of the SSQ [$F(4, 478) = 2.45, p < .05$]. Post hoc contrasts revealed that the social skills of community child care children were rated significantly higher by their kindergarten teachers than children who attended the standard or the family-focused classes or children who did not attend group day care, and marginally higher than the Head Start children. Girls were also rated higher than boys, [$F(1, 478) = 23.66, p < .0001$]. No effects were found for ethnicity.

On the Academic Competence scale of the SSQ, children who previously attended community child care were scored significantly higher by their kindergarten teachers than those in the other four groups [$F(4, 478) = 4.52, p < .001$]. Higher ratings were also found for girls than boys [$F(1, 478) = 12.95, p < .0004$]. No effects were found for ethnicity.

No preschool group or ethnicity effects were found for the Problem Behaviors scale of the SSQ. Gender differences were revealed, with boys rated higher in problem behaviors than girls [$F(1, 478) = 23.85, p < .0001$].

Relationship of Preschool Classroom Quality to Kindergarten Outcomes

Longitudinal analyses were performed to examine the relationship between child care quality in the public preschool classrooms and the children's intellectual, academic, emotional, and social skills during kindergarten. These analyses were possible for all 276 public preschool graduates because data had been collected during their prekindergarten year. The outcome measures included standardized scores on the PPVT and the WJ-R, and teacher ratings on the Vineland and the SSQ. These analyses were performed using general linear mixed models that included as fixed effects the child's gender, ethnicity (white vs. non-white), and SES (free or reduced-price lunch vs. full-price lunch). Outcomes were related to the primary measures of preschool classroom quality (the ECERS and the FMI variables). The public preschool class was included as a random variable to adjust for within-classroom effects. (This corrected for differences in the numbers of children included in these analyses from each preschool class, ranging from 1-6). These data were first tested using the full model that included each of these main effects terms, as well as the interactions of quality with gender and with ethnicity, and gender with ethnicity. The model was then iteratively reduced, deleting the nonsignificant quality interaction terms.

The relationship between assessments of children's receptive language in kindergarten as measured by the PPVT-R and the quality of their preschool classroom was analyzed. Scores on the PPVT-R were significantly or marginally significantly related to classroom quality on all the ECERS variables, (Total, Appropriate caregiving, and Developmentally appropriate activities) indicating that quality was positively related to children's outcomes in kindergarten. There were also marginally significant quality by race interactions for each of these variables, suggesting that quality was positively related to outcomes for white children but not for non-white. Significant main effects were found for the Appropriate caregiving factor [$F(1, 213) = 3.93, p < .05$] with a marginally significant interaction with race [$F(1, 213) = 2.73, p < .10$]. Marginally significant quality and quality by race interactions were found respectively for the Total ECERS score [$F(1, 213) = 3.19, p < .08$; $F(1, 213) = 3.31, p < .07$] and the Developmentally appropriate activities factor [$F(1, 213) = 2.95, p < .09$; $F(1, 213) = 3.50, p < .06$]. There were no relationships between PPVT-R scores and the FMI factors.

The relationship of preschool classroom quality to assessments of children's reading and math skills on the WJ-R was also examined. On the WJ-R reading subscale, there was a marginally significant effect of quality, with a significant quality by gender interaction for the ECERS Developmentally appropriate activities factor [$F(1, 214) = 2.29$, $p < .13$; $F(1, 214) = 4.77$, $p < .03$]. This finding indicated that there was a positive effect of quality on reading scores for boys, and a nonsignificant negative effect of quality on reading scores for girls. Quality was marginally related to reading outcomes for the FMI Child-oriented language factor [$F(1, 197) = 3.45$, $p < .06$], with a marginal quality by gender interaction [$F(1, 197) = 3.67$, $p < .06$]. This finding indicates that there was a positive effect of this aspect of classroom quality (teachers' child-oriented language) on reading scores for girls, but not for boys (whereas the previous positive relationship between Developmental Appropriateness and WJ-R Reading held for boys but not for girls). There was also a significant effect for the Non-elaborative language factor [$F(1, 197) = 3.73$, $p < .05$], with a marginally significant quality by ethnicity interaction [$F(1, 197) = 3.38$, $p < .07$]. This result suggests that there was a positive relationship between this measure of quality and children's outcomes, but the positive effect seems to be found for white children but not for non-white.

There were no relationships between children's WJ-R math scores and any of the ECERS measures. There was a significant main effect of quality for one of the FMI factors, Teacher directiveness [$F(1, 198) = 3.87$, $p < .05$], indicating that children who had attended preschool classes where teachers used less directive language had higher math scores than those who attended classes with more directive language.

The relationship between preschool classroom quality and teacher ratings of children's communication skills in kindergarten as measured by the Vineland was examined. There were also no effects of quality as measured by the ECERS on children's Vineland scores in kindergarten. There was a significant main effect for one of the FMI factors, Teacher directiveness [$F(1, 174) = 5.95$, $p < .02$], with a marginally significant interaction with gender [$F(1, 174) = 3.34$, $p < .07$]. This finding suggests that there is a negative relationship between Teacher directive language in preschool and children's Vineland scores in kindergarten, but this relationship is found more strongly for girls than for boys. Children who attended preschool classes with less teacher directive language were rated higher by kindergarten teachers in communication skills than were children from classes with more directive language.

The effects of preschool classroom quality on children's social development in kindergarten was examined, using teacher ratings of social skills, problem behaviors, and academic competence as measured by the Social Skills Questionnaire (SSQ). There were no relationships between any of the ECERS measures of preschool classroom quality and any of the SSQ subscales. For the social skills subscale, there was a significant main effect for the FMI Non-elaborative language factor [$F(1, 173) = 5.51$, $p < .02$] and a significant quality by ethnicity interaction [$F(1, 173) = 5.34$, $p < .02$]. This result indicates that white children who attended preschool classes with less non-elaborative language were rated higher by their kindergarten teachers on social skills, but there was no relationship between this form of teacher language in preschool and kindergarten teachers' ratings of social skills for non-white children.

For the academic competence subscale of the SSQ, a significant main effect was found for the FMI Teacher directiveness factor, [$F(1, 173) = 11.83$, $p < .0007$] and a significant interaction with gender [$F(1, 173) = 10.39$, $p < .002$]. Examination of this result shows that there was a negative relationship between Teacher directiveness and academic competence for girls and a positive relationship for boys. This finding indicates that girls who attended preschool classes with less teacher directive language were rated higher in academic competence by their kindergarten teachers than girls from classes with more teacher directive language, while boys from classes with more teacher directive language were rated higher in academic competence in kindergarten than boys from classes with less teacher directive language.

No significant relationships were found between any of the classroom quality ratings and kindergarten teachers' ratings of children's problem behaviors.

Discussion

More directive teacher-child interactions in public preschool tended to be negatively associated with children's outcomes in kindergarten, while other forms of teacher-child interactions were positively associated. This result is similar to those of other studies associating certain teacher behaviors with child outcomes (Whitebook, Howes, & Phillips, 1989; Phillips & Howes, 1987). Directive language interactions are not considered developmentally appropriate by NAEYC and the *Circle of Childhood* curriculum, which recommend the use of more elaborative, eliciting language. There were positive relationships between global classroom quality (as measured by the ECERS) and children's receptive language and reading achievement. Specific teacher language factors (as measured by the FMI) were related to children's outcomes on reading and math achievement and teacher ratings of communication development, social skills, and academic competence. The global measures of classroom quality were negatively correlated with Teacher directiveness and positively correlated with teachers' Child-oriented language and Non-elaborative language, suggesting an indirect link to outcomes based on the relationship between general aspects of quality such as those measured by the ECERS and specific aspects of quality such as those measure by the FMI. There also were some ethnicity and gender differences in these findings, with stronger effects of quality found for white children than non-white, and girls than boys (although there were some effects for boys). The links between preschool classroom characteristics and kindergarten outcomes seem stronger than the links between those same characteristics and end-of-year preschool outcomes.

A consistent pattern of differences by type of preschool emerged in the analyses of both child assessments and teacher ratings. Children who attended other community child care programs scored consistently higher. Public preschool children were generally not different than children who attended Head Start, with a trend towards scoring higher than children who did not attend group child care. At kindergarten, children who had attended the family-focused public preschool classes looked similar to children who had attended the standard public preschool classes. All children scored well below national averages regardless of their type of preschool experience, indicating that this was indeed a sample of children at risk.

We attempted to equate the five groups on family SES by using their lunch purchase status as a selection factor, including only those children who received free or reduced-price school lunches. (See Table 43 for income eligibility.) This provided only a broad similarity between groups based on income and did not allow us to examine other important family factors such as education, work status, attitudes towards education, and childrearing values. Using lunch status did not even allow for more specific measures of SES based on gradations of income. For example, children of parents who work at low-paying jobs may still qualify for reduced-price lunches, but there may be other differences affecting child outcomes which are also related to their parents' choosing to work.

Children in community daycare are more likely to have received full-day child care in the year before kindergarten entry while the public preschool and Head Start programs tend to be school-day programs (with wrap-around or after-school care often not available).

Table 43

Annual Income Eligibility Guidelines for Free and Reduced Price Meals

Household Size	Reduced Price Meals	Free Meals
1	12,895	9,061
2	17,446	12,259
3	21,997	15,457
4	26,548	18,655
5	31,099	21,853
6	35,650	25,051
7	40,201	28,249

Source: Federal Register.

Children in community child care may also have attended those programs when they were 1, 2, and 3 years old, as well as when they were 4. Thus, children in the public preschool or Head Start intervention programs were likely to have experienced a lower "dose" of the treatment of interest than those in community day care.

Because the community day care programs may have been more likely to serve children of parents who work (because these programs are open longer hours), the children in our community day care sample were also more likely to have had working parents than the children in the other four groups (although because their children qualify for free or reduced-price lunch, they must have been working for low wages). It is possible that these families may have had different attitudes relating both to work and to their child's education. In addition, community day care centers are more likely to serve a broader range of children in terms of family SES than are Head Start and public preschool programs which primarily serve low-income families. Children who attended community day care centers may have been exposed to a generally higher functioning peer group than children in public preschool and Head Start. Exposure to these children may have been beneficial to the development of the low-SES children in the group, the population from which our sample of children who attended community child care was drawn.

As we learned from the survey results, the public preschool programs tend to accept children who are the most at-risk or the lowest-functioning children from their pool of applicants. This selection process may have assured that our sample of public preschool children was--at the very beginning--relatively more disadvantaged than children in other programs and therefore likely to be lower functioning. Without comparisons among all five groups prior to entrance into the pre-kindergarten program, it is difficult to determine the relative impact of these different types of preschool experiences.

The public preschool children are performing at least as well as children in another intervention group--Head Start. Head Start is a well-established program with a 25-year history. Although there are questions about the overall quality and intensity of services it provides, it has matured through its start-up phase. As indicated in the surveys, the public preschool programs are still fairly new, and are most likely going through changes related to start-up and expansion. The quality of the public preschool programs was good overall, however, and the outcomes of the children similar to those in Head Start. These findings suggest that the public preschool programs provide a valuable resource for early intervention by providing another option for children and families who are most in need. Sufficient slots in intervention programs or child care are often not available for these children at a cost their families can afford. The public preschool programs fulfill a much needed role in early childhood education and care in this state.

An alternative explanation for the limited relationships found between quality of the public preschool classes and children's outcomes and the better performance of children in community child care is that, within the range of safe programs, the quality of one's preschool experience may be less important than actually being exposed to a preschool experience. This theory is simply stated as "any preschool experience is better than none." We think this is a less likely explanation for the limited relationships between quality and outcome than the effects of family factors. Family factors exert a continuous influence on children throughout their lives, including the family's choice of preschool program type.

The group which tended to perform the lowest on our measures were children with no group care experience in their four-year-old year. Participation in some type of child care or early intervention program seemed to be beneficial to the children from low-income families in our sample. Children whose families are poor enough to qualify for free or reduced-price lunches and who did not attend any kind of organized group pre-kindergarten may also have parents who do not value or did not have the resources to find a preschool experience for their child. In addition, these children were not exposed to group care settings that typically enhance children's development.

SUMMARY DISCUSSION

A number of concerns regarding program policies were generated around the issues of eligibility criteria, logistical matters, resources, curriculum, and training. Problems were identified in each of these areas which may pose barriers to program quality, and should be addressed in continuing efforts toward improvement. The use of screening tests for admission to programs should be examined, to insure that such instruments are being used appropriately. The widespread use of such admissions criteria suggests that a particularly disadvantaged group is being served by these programs. Given that, it is important to be sure that adequate resources are available to children and teachers to provide an appropriate program. Access to an early education specialist by each program, along with other needed experts, needs to be provided. The relationship between training and implementation of an early childhood curriculum in the classroom needs to be further examined. Issues such as transportation, times of program operation, and location need to be examined in light of the needs of the children and families being served.

A wide range of quality and appropriateness were found in public preschool classes in North Carolina, with many functioning in ways that meet standards of developmental appropriateness. One of the main goals of this study was to determine the developmental appropriateness of the public preschool programs of North Carolina. As a group, this was the highest rated research sample we have studied in the past three years (compared to kindergartens, Head Start classes and community child care programs). The average score was one standard deviation higher for public preschool classes than for the 103 kindergarten classes observed in a similar study in 1989 (Bryant, Clifford, & Peisner, 1991). As with most aspects of life, however, there is always room for improvement, as the average classroom scored 4.8 when a target score of 5.0 or above is recommended as a goal for developmental appropriateness. About 38% of public preschool classrooms met or exceeded our standard of developmental appropriateness (at least a 5.0 on the ECERS). About 27% were within half a point of 5.0, a reachable distance with a little more attention to certain developmental areas (e.g., more language interactions, more variety in activities, more child choice). However, 35% were functioning below this standard, so continuing support and encouragement are needed.

It is particularly distressing that the area of language use in the classroom was so low, the only subscale that was not at least close to or met the criterion for the overall sample. The language interactions between children and their adult teachers are critical at this age, and children's language skills are crucial to their school success. This seems to be an important area to target for improvement program wide.

The global measure of quality as rated by the ECERS was also related to some more specific aspects of teacher-child interaction as measured by the FMI. While teachers generally asked more direct questions and fewer open-ended questions, greater use of open-ended questions was related to higher overall quality of the classroom. Most early childhood educators and researchers consider teacher language which encourages greater elaboration by children to be more optimal for children's development and consistent with a better quality classroom overall.

These characteristics of preschool classroom quality were also related to children's outcomes in preschool and in kindergarten. There were some positive associations of global classroom quality measures with teacher ratings of children's communication development and expressive social development at the end of preschool. Less directive language by teachers was related both to general classroom quality and to children's outcomes in kindergarten. Children who scored higher on assessments of math achievement and were rated higher by their kindergarten teachers on communication development and academic competence had attended public preschool programs with teachers who used less directive language. Children's outcomes on standardized assessments of receptive language vocabulary and pre-reading skills achievement in kindergarten were related directly to the more global measures of preschool classroom quality.

Previous research led us to predict that positive relationships would be found between measures of classroom quality and cognitive and social outcomes of children. In this study, we found many significant associations between quality factors and outcome measures in preschool and kindergarten (21% of tested relationships), although the patterns are not clear or consistent. Each of the quality variables predicted at least two outcomes for some subgroups of children and all but one of the outcomes are predicted by one or more quality factors. The kindergarten PPVT-R and WJ-R Reading scale seemed most sensitive to preschool quality differences.

Perhaps more relationships would have been observed with a broader range of quality among preschool classes or below a certain threshold of quality. In this study, the public preschool classes in general were of fairly high quality. The effects of differences in quality at the upper ranges of the ECERS may not be as noticeable as at the lower ranges. Alternatively, perhaps the outcome measures used were not sensitive to differences in developmental appropriateness. The specific outcomes we measured may relate more directly to specific aspects of teaching practices or content than to more global measures of classroom status.

In general, the effects of quality were stronger for white than non-white children, and for girls than boys. The distinctions in quality seemed to matter more for children who started out at a higher developmental level at the beginning of preschool. Although all groups showed improvement over the course of the preschool year, there were still significant differences between boys and girls in many areas both at the end of preschool and in kindergarten. In contrast, there were no differences between white and non-white children at the end of preschool, and few differences in kindergarten. Given the generally high quality of the public preschool programs, it may be that differences in quality were less important in affecting children's outcomes than whether or not a child attended a program. However, the consistently lower scores of boys on preschool and kindergarten teachers' ratings and standardized assessments is notable. While gender differences in school performance and behavior have been found in numerous studies (e.g., Bryant, Clifford, & Peisner, 1991; Miller & Norris, 1967; Peisner, 1991; Shaw & Braden, 1990; Uphoff & Gilmore, 1986; Woolridge & Richman, 1985), it is still important to consider ways in which our school system can better meet the needs of all children.

Comparisons of kindergarten outcomes among children who attended public preschool (standard Chapter 1 or family-focused), Head Start, community daycare, or had no group care revealed a consistent pattern. Children who attended other community day care programs the year before kindergarten scored higher than children in the other groups on individual assessments of language, reading, and math, and were rated higher by their kindergarten teachers on social skills and communication development. There was also a trend for children who had no group care the year before kindergarten to score lowest.

The children in all these groups were from low-income families, a characteristic often considered a risk factor for school failure. The scores on the standardized assessments indicated that these children were scoring about one standard deviation below the expected population mean at mid-year in kindergarten, suggesting they were indeed an at-risk group. The children in the public preschool group, who were frequently chosen for their preschool class on the basis of being the most in need, may have been relatively more disadvantaged.

The parents of these different groups of preschoolers also likely differed in attitudes and behaviors which may affect children's development. We were unable to obtain family measures, but attempted to broadly equate the groups in terms of eligibility for free or reduced-price lunch. This did not allow for finer distinctions in family SES, nor for other differences among families which affect children's outcomes. Children who attended the other community day care programs were more likely to have had working parents, since these programs provide full-day care, in contrast to most public preschool and Head Start programs. They were also more likely to be exposed to a more heterogeneous group of children in terms of SES in their day care program, which may have had a beneficial impact on the low-SES children in our sample.

While this study has attempted to address the issues of the impact of public preschool program quality on children's outcomes and the differential impact of various types of pre-kindergarten programs on children's outcomes in kindergarten, the moderate findings of the impact of quality and the pattern of group differences suggest the need for additional information to clarify these results. In order to better address the question of the relative impact of public preschool programs compared to other programs on children's developmental outcomes and school success, it will be necessary to utilize a research design which includes information about the programs and the children and families in all groups at entry into preschool and then follows them into the early school years. Information about the families, including SES and parental beliefs and values about childrearing and education is a key variable for understanding group differences. It will also be important to obtain information about program quality and intensity of treatment across all groups, with both global and specific measures of classroom practices.

RECOMMENDATIONS

Based on the overall findings of this study, we make the following recommendations regarding the public preschool program.

1. The quality of the current public preschool programs is generally high. Teachers and administrators should be commended, yet encouraged to continue working on developmental appropriateness. As efforts toward expansion of the programs continue, maintaining the quality of these classes and of newly established preschool classes should be emphasized. Gradual expansion in the numbers of developmentally appropriate classes is preferable to rapid expansion if rapid expansion causes a sacrifice in quality.

2. Some areas in the current programs seem to require special attention toward improving quality, both in the existing classes as well as in any new classes that are added. These areas include cultural awareness in the activities and materials within the classrooms, toileting facilities and practices, gross motor equipment, dramatic play materials and activities, furnishings for learning activities, and professional opportunities for teaching staff.

3. The proportion of teacher language that is directive and instructional, noted in the ECERS ratings as well as in the low frequency of categories such as open-ended questions on the FMI, suggests that teacher-child language interactions are an important area to target for teacher training. More responsive and elaborative teacher language leads to greater use and improved skills in language by children. It is especially important to focus on giving teachers ways to implement this training in the classroom, rather than just providing knowledge-based training.

4. All programs, whether family-focused or standard Chapter 1 preschools should continue to attempt to involve families in their children's educational program. However, the findings of only a few differences between children who attended the family-focused versus the standard Chapter 1 classes at the end of preschool or in kindergarten suggests (a) that family involvement may not pay off in the short term in child-related outcomes, but rather in parent-focused outcomes or (b) that the methods used by these programs for family involvement may not actually get families involved. It is important to examine more closely the differences in what these programs offer to the families. The potential impact of some of the family-focused programs may have been weakened by a lack of parental attendance at both the adult learning classes and in opportunities for interactions with the children in the preschool setting. It may be that the offerings of these programs are not meeting the needs of the families enrolled. It is certainly the case that preschool teachers and administrators express some disappointment in the levels of parent involvement they have achieved. In order to be more successful in this area, programs should examine the relevance and feasibility of the involvement activities for the families they are serving.

5. Pre-kindergarten programs should review their screening procedures. Programs funded by Chapter 1 are indeed required to use objective criteria, although screening measures are not specifically required. Parental educational level or observer ratings could be used. If screening assessments are used to enroll the most delayed children or to provide information to guide appropriate instruction, then measures should be carefully selected, administered and scored properly by trained and experienced staff, and used by knowledgeable teachers to plan activities that encourage areas of weakness and build on areas of strength.

6. The majority of children served by these programs were minorities, and their relatively greater improvement suggests that these programs are beneficially serving this group, and should continue doing so. The findings of no differences by ethnicity at the end of the preschool year suggests that these programs are beneficial for all children who attend, resulting in even greater gains for children who start out farther behind. The findings of a differential impact of the quality of these programs by ethnicity and the better performance of the public preschool children compared to children who did not attend group care suggest that for these minority children, attendance at the public preschool program, which is generally of good quality, is important for intervention efforts, while the finer distinctions in quality may be less important in determining their outcomes.

7. It is important to examine ways in which programs can be changed to be equally advantageous to both boys and girls. The findings of consistent differences in outcomes between boys and girls and differential effects of preschool quality on their outcomes merit attention. While girls are generally seen as more easily adapting to the school setting than boys, the consistent differences at this early age are disconcerting. Since these programs are supposed to benefit all children, then it is important for the system as a whole to examine ways in which to make the programs as appropriate and beneficial for boys as well as girls.

8. Creating blended preschool classes which include both educationally disadvantaged children and non-disadvantaged children may be beneficial to the disadvantaged group currently being served. The findings of better performance in kindergarten by children in the community child care programs compared to the public preschool or Head Start programs, which serve primarily disadvantaged children, supports this idea. Even though the children in the community child care sample were from low-income families, the community programs they attended most likely included a heterogeneous mix of children by social class. This exposure may have been one of the factors resulting in the higher scores of these children relative to the other groups. Such blended classes are also more representative of the types of schooling experiences children will have beyond public preschool, and may help their adaptation to school by creating an environment which will already be more familiar once they reach kindergarten.

9. After-school care programs were not available in about 2/3 of the pre-kindergartens surveyed. For all working parents, and particularly for parents in continuing education or jobs training programs (which are components of many preschool programs), finding care after 2:30 p.m. can be an obstacle. Extending the school day or finding other creative ways to provide such care are other ways of being family friendly as well as ensuring safe and appropriate late afternoon care for the children attending preschool.

10. Early childhood education specialists or mentor teachers, knowledgeable about developmentally appropriate practices, should be available as a resource to pre-kindergarten teachers and other early grade teachers. The start-up phase of new programs is an opportune time to infuse appropriate training, technical assistance, and monitoring. Programs that are in the process of growth and change can more readily be guided into adopting or developing age-appropriate and individually-appropriate learning settings on teaching strategies.

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APPENDIX

QUESTIONNAIRES AND MEASURES USED

The 37 Items of the
EARLY CHILDHOOD ENVIRONMENT RATING SCALE

PERSONAL CARE ROUTINES

1. Greeting/departing
2. Meals/snacks
   OR ◆2. (infants)
3. Nap/rest
4. Diapering/toileting
5. Personal grooming

FURNISHINGS AND DISPLAY FOR CHILDREN

6. For routine care
7. For learning activities
   OR ◆7. (infants)
8. For relaxation and comfort
9. Room arrangement
   OR ◆9. (omit for infants)
10. Child related display
    OR ◆10. (infants/toddlers)

LANGUAGE-REASONING EXPERIENCES

11. Understanding of language
12. Using language
13. Using learning concepts
14. Informal use of language
    OR ◆14. (infants/toddlers)

FINE AND GROSS MOTOR ACTIVITIES

15. Perceptual/fine motor
16. Supervision: fine motor activities
17. Space for gross motor
18. Gross motor equipment
19. Scheduled time for gross motor activities
20. Supervision: gross motor activities

CREATIVE ACTIVITIES

(omit for infants)

21. Art
22. Music/movement
23. Blocks
24. Sand/water
25. Dramatic play
26. Schedule
27. Supervision: creative activites

SOCIAL DEVELOPMENT

28. Space to be alone
29. Free play
30. Group time
    OR ◆30. (omit for infants)
31. Cultural awareness
32. Tone
33. Provisions for exceptional children

ADULT NEEDS

34. Adult personal area
35. Opportunities for professional growth
36. Adult meeting area
37. Provisions for parents

Thelma Harms & Richard M. Clifford
Teachers College Press
1980

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SAMPLE ITEMS -- EARLY CHILDHOOD ENVIRONMENT RATING SCALE

Item	Inadequate		Minimal		Good		Excellent
	1	2	3	4	5	6	7
Personal Care Routines							
5. Personal grooming	Little attention paid to personal grooming (Ex. hand washing, hair combing, toothbrushing).		Inconsistent attention paid to grooming needs: hand washing, toothbrushing, etc., not a regularly scheduled part of the day.		Scheduled times for grooming: teeth brushed after meals, hands washed at meal times and after toileting. Grooming routines used to develop positive self concept. Extra clothes to change children.		Each child has toothbrush, etc.; grooming is part of educational program to promote good health care habits. Independence encouraged with proper supervision.
Furnishings and Display for Children	1	2	3	4	5	6	7
7. For learning activities Basic materials: tables and chairs, open shelves for storage of play materials, easel or art table.	Insufficient number of *basic* learning activity furnishings.		Sufficient number of *basic* learning activity furnishings in good repair.		Basic learning activity furnishings plus woodwork bench and sand/water table. Easel or art table used daily; woodwork bench and sand/water table used weekly (woodwork bench may be omitted for toddlers and 2's).		Full range of learning activity furnishings regularly used plus provision for appropriate independent use by children (Ex. through picture-word labeling or other guidance).
Language-Reasoning Experiences	1	2	3	4	5	6	7
12. Using language (expressive language) Activities: Puppets, finger plays, singing, rhymes, answering questions, talking about experiences, interpreting pictures, child dictated stories, dramatic play.	No scheduled activities for using language (Ex. no children's planning time, talking about drawings, dictating stories, show 'n tell, etc.).		Some scheduled activities for using language (Ex. show 'n tell), but child language not encouraged throughout the day.		Many scheduled activities for using language available during free play and group times, but not planned specifically for expressive language development.		Daily plans provide a wide variety of activities for using language during free play and group times. Opportunities to develop skills in expressing thoughts are part of a language development plan based on individual needs. Teachers encourage expressive language throughout the day.

Fine and Gross Motor Activities	1	2	3	4	5	6	7
16. Supervision (fine motor activities)	No supervision provided when children play with perceptual/fine motor materials.		Supervision only to protect health and safety or stop arguments.		Child given help and encouragement when needed (Ex. to finish puzzle, to fit pegs into holes; shown how to use scissors, etc.). Teacher shows appreciation of children's work.		Everything in 5 plus teacher guides children to materials on appropriate level for success. Teacher plans learning sequences to develop fine motor skills (Ex. provides children with puzzles of increasing difficulty, stringing of large beads before small beads).

	1	2	3	4	5	6	7
Creative Activities							
21. Art	Few art materials available; regimented use of materials (Ex. mostly teacher directed projects). Art materials not readily available for children to use as a free choice activity.		Some materials, primarily drawing and painting, available for free choice, but major emphasis on projects that are like an example shown.		Individual expression and free choice encouraged with art materials. Very few projects that are like an example shown.		Variety of materials available for free choice, including three dimensional materials (Ex. clay, art dough). Attempt to relate art activities to other experiences.

Social Development	1	2	3	4	5	6	7
31. Cultural awareness	No attempt to include ethnic and racial variety in dolls, book illustrations, or pictorial bulletin board materials. All toys and visible pictures are of one race only.		Some evidence of ethnic and racial variety in toys and pictorial materials (Ex. multiracial or multi-cultural dolls, books or bulletin board pictures of varied countries and races).		Cultural awareness evidenced by liberal inclusion of multiracial and non-sexist materials (Ex. dolls, illustrations in story books, and pictorial bulletin board materials).		Everything in 5 plus cultural awareness is part of curriculum through planned use of both multi-racial and non-sexist materials. (Ex. including holidays from other religions and cultures, cooking of ethnic foods, introducing a variety of roles for women and men through stories and dramatic play).

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CODES FOR FIVE MINUTE INTERACTION (FMI)

(observations in preschool classrooms)

Code	Code Usage	
1 - Command or Request	Code 1 asks for a response free of argument or speculation. There is one expected, acceptable response that is to be carried out, verbally or nonverbally: Code 1A refers to academic information.	
	• "Open the door, please."	TC1
	• "Read this sentence."	TC1A
	• "Draw a line."	TC1
	• "Zip me up."	CT1
	• "Gimme that book."	CD1
1Q - Direct Question	Code 1Q questions are those that ask for direct recall of material already learned, or anticipate a specific or automatic response or a yes-or-no answer. Code 1Q questions elicit the following responses: statements of preference, statements of fact, itemizing, classifying, and definitions.	
	• "In the story, did you like Mr. Brown?"	TC1Q
	• "What is one-half and one-half?"	CD1QA
	• "What was on the list of mountain climbing equipment we made yesterday?"	TL1Q
	• "If you had two pears and three apples, what would you have five of?"	TS1Q
	• "Is this dog a Great Dane or a St. Bernard?"	CD1Q
	• "What does this word mean?"	TC1QA
2 - Open-Ended Question	Code 2 questions are those that allow a free expression of ideas or feelings and invite opinions. Code 2 questions encourage responses that require: interpreting ideas, cause and effect establishing relationships, making comparisons, reasoning, applying previously learned material to a new situation, and describing a process. Code 2 can be a request for information not a question. Code 2 may be phrased as a statement as well as a question.	
	• "What do you think of the Eskimo way of life?"	TC2
	• "Why did you like Mr. Brown in the story?"	CD2
	• "State the problem in your own words."	TC2
	• "Tell me how an electric train works."	CD2
	• "In what ways are the things in this picture alike?"	TC2
	• "Use these sticks to see if you can find all the different groupings that add up to ten."	TC2A

Code	Code Usage	
3 - Response	Code 3 is a response to a command (Code 1) or a question (Code 1Q, 2), or is corrective (Code 9). When the response is concerned with basic academic skills, Code 3 is used with A in the How column; it is used with B in the How column when it follows acknowledgment, praise, or a corrective for behavior.	
	• "Read the next sentence, Jimmy." "The dog chased the ball."	TC1A CT3A
	• "Will you add two and two?" "Two and two makes four."	TC1QA CT3A
	• "Guess what I've brought for you." "Flowers—or an apple."	CT2 CT3
	• "Please shut the door." The child shuts the door (nonverbal).	TC1 CT3NV
	• "Did you save my painting?" "Yes, it's hanging up."	CT1Q TC3
	• "We can't hear when you do that, Alice." Alice is quiet.	TC9GB CT3NVB
4 - Instruction, Explanation	Code 4 is used when a teacher or child is: (a) Verbally giving new information to others, reviewing lessons, or explaining rules of behavior. (b) Nonverbally engaged in demonstrating or in an activity that is productive, organized, or exploratory (including playing with games, blocks, and dolls, and water play). When the interaction is concerned with the basic skills of reading, writing, spelling, and computation, Code 4 is used with A in the How column. If an object is being used in self-instruction, Code 4 is used with O in the How column.	
	• "Flowers grow everywhere. There are many different kinds of flowers and they grow in many shapes and colors."	CL4
	• "Here is a game called 'Community People.' You play by matching the pictures on your card with those on the large card."	TS4
	• "This is how I'd like you to do these exercises: First, fold your paper in half like this. Then in half again like this. Then put the first problem in this square and the second here."	TS4
	• "I made my puppet out of an old sock and I made the eyes from pieces of crayon (holding puppet)."	CS4
	• "You have to add three to seven here and carry the one over to this column; then add those."	CD4A
	• Child learning the shape of a letter by running a finger over a sandpaper letter on a card. (NOTE: When the action involves only one person, the Who and To Whom columns are coded with the same letter.)	CC4NVOA
	• Child reading aloud to a small group of children.	CS4A
	• A child building a block tower.	CC4NVO
	• Child reading to himself.	CC4NVA

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Code	Code Usage	
5 - General Comments/ General Action	Greetings, personal compliments, social or non-task-related comments and remarks. Irrelevant remarks are also coded 5.	
	• "Hello." "Good morning."	TC5
	• "That's a pretty dress."	CT5
	• "I can't stand you today."	CD5N
	Classroom management activities, general movement about the room, mild horseplay, eating, napping, are coded 5NV. (NOTE: 5NV is coded only if there is no talking along with the general action; otherwise, the observer codes the kind of remark that is accompanying the general action.)	
	• Child setting the table for lunch or snack.	CC5NV
	• Two children jostling in a line	225NV
	• Teacher walking around the room.	TT5NVX
6 - Task-Related Comment	Code 6 is used for a statement about the activity or problem at hand.	
	• Two children making clay animals:	
	C: "This clay makes my hands sticky."	CD6
	D: "The horn won't stay on my cow."	DC6
	C: "Mine doesn't have a horn."	CD6
	• Teacher is conducting a Show-and-Tell period:	
	T: "What did you do over the weekend?"	TL1Q
	C: "I went to the zoo with my daddy."	CT3
	D: "The tigers are really big."	DT6
	C: "The elephants are bigger."	CD6
	• Three children are working with metal washers and a balance:	
	C: "I think three big washers will balance four small ones."	C26A
	D: "I'll try it."	DC6A
	D: "I sure like your cowboy boots."	DC5
	C: "It balanced!"	C26A
7 - Acknowledge	An indication that a response, product, or behavior is recognized or agreed with is coded 7. Another form of acknowledgment is to repeat someone else's statement immediately.	
	Code 7 with A in the How column is used to indicate acknowledgment of a response having to do with academic subject matter; it is used with B in the How column to indicate acknowledgment of a response having to do with behavior.	
	• Nodding (nonverbal) to indicate that a painting is acceptable.	TC7NV
	• "Yes, that's the right way to knead clay."	TC7
	• "That math problem is correct."	TC7A
	• "Thank you for sitting down when I asked you."	TC7B
	• "What do you think is in this bag, Peter?"	TC2
	• "I think it's a carrot."	CT3
	• "You think it's a carrot."	TC7

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Code	Code Usage	
8 - Praise	Code 8 is used to praise a response, product, or behavior. Praise in academic areas is coded 8 with A in the How column, praise for behavior is coded 8 with B in the How column.	
	- "What a pretty picture you've made!"	TC8
	- "I like the story you wrote about your trip, Jim."	TC8A
	- "You've done a fine job on your math workbook."	TC8A
	- "I'm really proud of you, class, for behaving so well while Mr. Mendelsohn was here."	TL8B
9 - Corrective Feedback	Corrective feedback is the attempt to change or modify a response, product, or behavior. Code 9 is used when the subject of the observation tries to change another's behavior or corrects another's answers or work. Codes G, Q, N, and P from the How column can be coded with 9 to show the method used to effect behavior modification. Code 9 is used with A in the How column to indicate corrective feedback in academic areas and with B to indicate corrective feedback having to do with classroom behavior.	
	- "Don't throw your ball against the wall; come and play on the swing."	TC9GB
	- "You'll have to stay in at recess if you continue to talk."	TC9NB
	- "Are you sure Sacramento is the capital of New Mexico?"	TC9Q
	- "The answer to that math problem is wrong."	TC9A
	- "No, that word is spelled b-u-i-l-d."	TC9GA
	- "You have not mixed that paint correctly."	TC9
10 - No Response	Code 10 is used for no response when a response is called for to complete the interaction but none is forthcoming. (NOTE: NV is not coded with 10, because 10 is by definition nonverbal.)	
	- "Teacher, may I be next?"	CT1Q
	Teacher does not reply because he is talking to another child.	TC10
	- "Jimmy, let me play with you."	CD1
	Jimmy does not look up or answer.	DC10
11 - Waiting	Code 11 is used when the subject of the observation is waiting in line or for materials, attention, use of equipment, or activity change. It is also used when the subject is not attending or is not involved with anyone or anything. (NOTE: NV is not coded with 11 because it is nonverbal by definition.)	
	- Child waiting at the teacher's desk while the teacher works with another child.	CC11
	- Child has finished work and is sitting at the desk staring off into space.	CC11
12 - Observing, Listening	Code 12 is used when the subject of the observation is listening to or watching other people, other activities, TV, slides, films, and the like. (NOTE: NV is not coded with 12.)	
	- A child sitting on a chair is watching a small group play with blocks on the rug.	CS12
	- Child listens to another child give a report.	CD12

Code	Code Usage	
	• Teacher stands watching the children and the activities in the room.	TL12
NV - Nonverbal	When the action being coded is not accompanied by words, NV is coded in the What column, along with the other relevant codes.	
	• Child laughing.	CC5NVH
	• Teacher passes out material silently to a small group.	TS5NV
	• Child taps the teacher's arm without speaking, requesting her attention.	CT1NVT
	• Child sits down in response to a request from the teacher.	CT3NV
X - Movement	Code X is used when the subject of the observation or a person with whom the subject is interacting moves. X can be used with any What code. If the movement is nonverbal and no What code is applicable, code X with 5 (general action).	
	• Teacher moves about the room while lecturing to the class.	TL4X
	• Child asks, "Ms. Hughes, will you help me?" while moving to the teacher.	CT1QX
	• Child walks over to close the door in response to a request from the teacher.	CT3NVX
	• Child runs to the door when recess is announced.	CC5NVX

THE HOW COLUMN

Categories in the How column are used in conjunction with the What codes.

Code	Code Usage	
H - Happy	Obvious behavioral expressions of happiness or positive affect, such as laughing, smiling, and giggling are coded with H.	
	• A child jumping up and down, clapping hands, and grinning over a new puppet.	CC5NVH
	• A child laughing at a joke.	CC5NVH
	• Teacher smiles as she says, "What are you doing?"	TC1QH
	• Child smiles—in reply to the teacher's praise.	CT3NVH
	• Two girls giggling and talking in the corner.	225H
U - Unhappy	Code U is used for obvious behavioral expressions of sadness or unhappiness, such as crying or welling tears.	
	• Child with tear-filled eyes waiting in a line.	CC11NVU
	• Child crying.	CC5NVU
N - Negative	Expressions of annoyance or anger, negative content (e.g., sarcasm, insults, threats), scolding, rejection, and destructive behavior are coded N.	

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Code	Code Usage	
N - Negative (Cont'd.)	• "You're stupid!"	CD5N
	• Teacher, red-faced and tight-lipped with anger, glares at class.	T[illegible]12N
	• "Johnny, if you can't leave Sandy alone, I will ask you to sit in the corner."	TC9NB
	• Child hits child ahead of him in line.	CD5NVNT
	• Child throws jar of paint on the floor in anger.	CC5NVN
T - Touch	Whenever one person touches another person, T is coded—with H to denote a positive touch, with N to denote a negative touch (hit, slap, pinch), and with P to denote a punishing touch from an adult to a child.	
	• Girl pinches another girl's arm.	CD5NVNT
	• Teacher puts her arm around a child and smiles as she says, "Jenny, will you help Lily with her puzzle?"	TC1QHT
	• Teacher moves around the class and touches a child on the head momentarily as she passes.	TC5NVXT
	• Teacher holds a child's hand.	TC5NVT
	• Teacher spanks child.	TC9NVPTB
Q - Question	Code Q is used with 1 for a direct question and with 9 when corrective feedback is in question form.	
	• "Are you sure that eight is the correct answer?"	TC9QA
	• "What color should I use?"	CT1Q
	• "Didn't I tell you not to bother Jimmy?"	TC9QB
	• "You weren't paying attention when I explained it, were you?"	TC9QB
G - Guide/Reason	G is coded with 9 when corrective feedback is positive and guides to an alternative activity, approach to a problem, and the like, or when the corrective includes a reason or explanation.	
	• "It might work better if you turned it around."	TC9G
	• "Sit down so the others can see, Gerald."	TC9GB
	• "If you knock that over it will make Jim angry, so please build your own tower."	TC9GB
P - Punish	Code P covers a range of adult disciplinary or behavior-modifying techniques, including withholding of privileges, isolation of a child, and physical punishment (coded with T). P is coded only with 9 in the How column.	
	• "Angela, go over to the corner and sit there alone until we're through!"	TC9PB
	• "Okay, Fred, no recess for you!"	TC9PB
	• Teacher spanks child for disruptive behavior.	TC9NVPT
O - Object	Code O is used with concrete, inanimate objects that are used in nonverbal self-instruction. (NOTE: When an object—token, candy, and the like—is given as a reward for a correct response or good behavior, O is coded with 8.)	
	• Child working on math using Cuisenaire rods.	CC4NVOA
	• Child building a block tower.	CC4NVO
	• Child fitting together pieces of a puzzle.	CC4NVO

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Code	Code Usage	
O - Object (Cont'd.)	• Small group using pennies in working out math problems.	SS4NVOA
	• Child examining several kinds of pine cones.	CC4NVO
W - Worth	Code W is used with child statements of self-worth, self-praise, or self-esteem; exclamations of accomplishment; positive remarks about one's self; bragging.	
	• "I did it!"	CT6W
	• "I can do three cartwheels in a row!"	CD6W
	• "Isn't my dress pretty?"	CT1QW
DP - Dramatic Play/ Pretend	Code DP describes playacting, puppet shows, and other dramatic presentations, talking to toys or dolls, pretending or making believe, role playing.	
	• Boy walking on all fours, howling like a wolf.	CC5NVDP
	• Two children giving a puppet show to the rest of the class: "Oh, here comes the prince!"	CL6DP
	• Child talking to her doll: "Now, Mary Pat, you know I've told you not to do that." (NOTE: Because there is no code in the Who and To Whom columns to symbolize a toy, doll, or other object of that kind, the example above must be coded as if the child is talking to herself.)	CC9BDP
A - Academic	Interactions that have to do with the development of basic skills as measured on achievement tests are coded with A: reading (letter and word recognition, vocabulary, pronunciation, grammar), writing, and computation (number recognition, counting, adding, subtracting).	
	• "What is two plus two?"	TC1QA
	• "Two and two is five."	CT3A
	• "No, it's four."	TC9GA
	• "You read beautifully today, Aaron."	TC8A
	• "Will you show me how to do this problem, Robert?"	CD1QA
	• "I figured out that word all by myself!"	CT6WA
B - Behavior	Code B describes interactions concerned with classroom behavior (deportment, conduct). Code B is used only with the feedback codes (7, 8, 9) and with the responses to them.	
	• "Sit down—now!"	TC9B
	Child sits down.	CT3NVB
	• "You were very quiet in group time today, Ralph, and we all appreciated it. Good for you!"	TC8B
	Ralph smiles.	CT3NVHB
	• "Betty, please go over and work on your collage instead of bothering Gina."	TC9GB
	Betty replies, "O.K."	CT3B

(NOTE: If neither A nor B is coded, it is assumed that the frame concerns other task-related content.)

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Frank Porter Graham Child Development Center

ID________________
(please leave blank)

Questionnaire for Public Preschool Administrators
(Clifford, Peisner-Feinberg & Bryant, 1992)

Name:________________________ Position:______________________
Local
Education Agency:______________________ Date:________________

Please answer the following questions about the public preschool class(es) in your district, not including any preschool handicapped classes. If you have any classes that are different from the others, please describe them. When you have completed the questionnaire, please place it in the attached envelope and send it through the state courier system.

1. How many public preschool classes were there **last year** (1990-91) in your district (not including preschool handicapped classes)?

____

2. How many public preschool classes are there **currently** (1991-92) in your district (not including preschool handicapped classes)?

____

3. Are any additional preschool classes planned for next year (1992-93)?

a. No Yes (Please circle)

b. If yes, how many?__________

c. If yes, which sources will you use to fund these classes? (Circle all that apply)

a. Chapter 1
b. Chapter 2
c. Even Start
d. U.S. Dept. of Education Family Literacy Grant
e. Kenan
f. Head Start
g. Local funds
h. Other Federal funds
please specify____________________________
i. Other grants
please specify____________________________
j. Other
please specify____________________________

Frank Porter Graham Child Development Center, University of North Carolina at Chapel Hill,
CB No. 8040, Suite 300, NCNB Plaza, Chapel Hill, North Carolina 27599-8040, telephone 919-962-7321

4. For each preschool classroom in your district, please list a) the name of the school, b) the current teacher, c) the number of children in membership, d) the number of months this class will be in operation during the 1991-92 year (including summer), and e) the primary source(s) of funding (e.g., Chapter 1, Chapter 2, Even Start, U.S. Department of Education Family Literacy Grant. Kenan Grant, Head Start, or other grants or sources--please be as specific as possible).

	School	Teacher	# Children	# Months	Funding Sources
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					

5. a. What is your total budget for the preschool program in your district this year (1991-1992)?

$________________________________

b. How much of this year's preschool funds were allotted for expenses such as "start-up" costs which will not be part of the operating budget in the future? (If none, please write N/A)

$________________________________

6. Which funding sources are included in the total preschool budget? (Please circle all that apply)

a. Chapter 1
b. Chapter 2
c. Even Start
d. U.S. Dept. of Education Family Literacy Grant
e. Kenan
f. Head Start
g. Local funds
h. Other Federal funds
please specify______________________________________
i. Other grants
please specify______________________________________
j. Other
please specify______________________________________

(Please continue with question 7 on the next page.)

Comments:

7. Which categories of expenditures are paid for from your preschool budget? (Please check all that apply)

_____Teacher Salaries and Benefits

_____Teacher Assistant Salaries and Benefits

_____Substitute Teacher Salaries and Benefits

_____Parent/Family Coordinator Salary and Benefits

_____Supervisor Salaries and Benefits

_____Consultant/Specialist Salaries and Benefits

_____Other Salaries and Benefits (specify)____________________

_____Staff Development

_____Meals and Snacks (Not including reimbursements from school food service)

_____Supplies (Office and Educational)

_____Equipment (Office, Playground, Classroom)

_____Physical Facilities (Rent, Repair, Renovations)

_____Parent Involvement

_____Field Trips

_____Home Visits

_____Insurance

_____Transportation

_____Communications (Phone, Postage)

_____Custodial services

_____Utilities (Electric, heat, water & sewer, trash removal, etc.)

_____Other Contracted Services (specify)__________________________________
(e.g., Speech therapist, Psychologist, etc.)

Please include any additional comments you have about items on the questionnaire or about your preschool program on the previous page.
THANK YOU FOR YOUR HELP.

ID________________

Questionnaire for Public Preschool Teachers

Please answer the following questions about the public preschool class you teach. When you have completed the questionnaire, place it in the attached envelope and send it through the state courier system.

1. What type of class do you teach? (Circle the correct letter)

a. Chapter 1 Program
b. Chapter 1 Even Start Program
c. Chapter 1 Enhancement Program
d. Chapter 2 Pilot
e. U. S. Department of Education Grant Pilot
f. Kenan Model
g. Other (please specify)________________________________

2. Please indicate the number of children in your class by sex:

Boys__________ Girls_________

3. Please indicate the number of children in your class by race:

Black_______ White_______ American Indian_______ Other_______

4. How many identified handicapped children are in your class?

____

5. How many "educationally deprived" children are in your class?
(If your program does not use this definition, write N/A)

____

6. How many other "at-risk" children are in your class?
(Not including those in questions 4 & 5)

____

7. What is the expected placement next year for the children in your class who will be old enough for kindergarten? (Indicate the number of children)

	Number of Children
Kindergarten	
Pre-kindergarten/Transition kindergarten	
Other(specify)______________________	

8. What types of screening instruments or standardized tests do you use with the children? (Circle all that apply)

a. Observation-based assessment
b. DIAL-R
c. LAP-D
d. Brigance
e. EPSF
f. Gesell
g. PPVT
h. Preschool Inventory
i. TOBE
j. Other (please specify)__________________________________

9. What are the hours and days of the week your program is in operation?

	Opening Time	Closing Time
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		

10. Which months of the year is your program in operation?_______________________

11. What is your main curriculum?____________________________
____

12. What, if any, supplementary curricula are used?

____

____

13. What days and hours do you have an assistant available in your class? (Please indicate the number of assistants available, if more than one)

	Hours
Monday	________________
Tuesday	________________
Wednesday	________________
Thursday	________________
Friday	________________

14. What types of consultants/services are available to help you and/or the children, and which of these have been used during the past year? (Circle Yes or No)

	Available		Used	
Early education specialist	Yes	No	Yes	No
Speech/language therapist	Yes	No	Yes	No
Psychologist	Yes	No	Yes	No
Physical therapist	Yes	No	Yes	No
Occupational therapist	Yes	No	Yes	No
Audiologist	Yes	No	Yes	No
Social worker	Yes	No	Yes	No
Parent coordinator	Yes	No	Yes	No
Other:____________________	Yes	No	Yes	No
Other:____________________	Yes	No	Yes	No

15. Which of the following family services are available to the parents through the preschool program, and which were used during the past year? (Circle Yes or No)

	Available		Used	
Health	Yes	No	Yes	No
Employment	Yes	No	Yes	No
Crisis intervention	Yes	No	Yes	No
Parent education	Yes	No	Yes	No
GED/Adult literacy	Yes	No	Yes	No
Social services referrals	Yes	No	Yes	No
Other:____________________	Yes	No	Yes	No
Other:____________________	Yes	No	Yes	No

16. How many children have had at least one parent involved in the following activities during the past year? (Indicate the number of children whose parent(s) participated--unduplicated count)

	Number of children
Visit the classroom	______
Help in the classroom	______
Go on field trips	______
Attend parent-teacher conferences	______
Attend two-way conferences	______
Attend parent meetings	______
Other: ______	______

17. How often have you visited children's homes during the past year? (Indicate the number of children for each)

	Number of Children
Never	______
Once	______
Twice	______
More than twice	______

18. Which meals are provided for the children by the preschool program? (Circle all that apply)

a. Breakfast
b. Morning snack
c. Lunch
d. Afternoon snack

19. Are any of the following programs available on the same site for the preschool children in your class? (Circle Yes or No)

	Available	
Before-school care	Yes	No
After-school care	Yes	No
Summer program	Yes	No

20. How useful have you found each of these types of staff development during the past year? (Circle the number)

	Not at all	Slightly	Somewhat	Fairly	Very	Did Not Attend
Pre-K Summer Institute	1	2	3	4	5	N/A
Regional meetings	1	2	3	4	5	N/A
Local workshops/ staff development	1	2	3	4	5	N/A
Visits to other preschool classes	1	2	3	4	5	N/A
Preschool Initiative Network--PIN (Regions 5 & 7)	1	2	3	4	5	N/A
Other:____________	1	2	3	4	5	N/A

21. Describe any aspects of your class that are different from most public preschool classes you know about.

22. What do you think are the best aspects of your program?

1.______________________________

2.______________________________

3.______________________________

23. What barriers to carrying out this program have you encountered?

1. ____

____

2. ____

____

3. ____

____

Please answer the following questions about yourself and your assistant.

24. How many years have you taught in this preschool program, including this year?

Teacher_________ Assistant_________

25. Altogether, how many years have you taught classes for 3- and/or 4-year-olds, including this year?

Teacher_________ Assistant_________

26. Altogether, how many years have you taught children of any age, including this year?

Teacher_________ Assistant_________

27. What is your highest educational degree? (Circle letter)

Teacher	Assistant
a. Bachelor	a. Some high school
b. Master	b. High School/GED
c. 6-year-degree	c. Associate Degree
d. Doctor	d. Bachelor
	e. Master

28. What certificates and endorsements do you hold? (Circle all that apply)

Teacher	Assistant
a. K-6 certification	a. Child Development Associate credential (CDA)
b. Early Childhood certification (K-4)	b. K-6 certification
c. Pre-K/K Add-on certificate	c. Early Childhood certification (K-4)
d. Preschool Handicapped certification	d. Pre-K/K Add-on certificate
e. Other:____________________	e. Preschool Handicapped certification
	f. Other:____________________

29. What is your age?

Teacher_________ Assistant_________

30. What is your sex? (Circle one for each)

Teacher: Female Male Assistant: Female Male

31. What is your race? (Circle one for each)

Teacher: Black White American Indian Other

Assistant: Black White American Indian Other

32. Please enclose a copy of your daily schedule.

33. Please use this space to write any additional comments you have about any of the items on the questionnaire, or about your preschool program.

THANK YOU FOR YOUR HELP

ID ____________________
(please leave blank)

Vineland Adaptive Behavior Scale
Communication Domain

(Adapted from Sparrow, Balla, & Cicchetti, 1984)

Teacher: ______________________________ **School:** ______________________________

Child's Name: ______________________________ **Birthdate:** ________________

Social Security Number: ______________________________ **Gender:** _____ **Race:** ______

Date: ______________________________

The following items cover a range of communication skills most children develop between the ages of 1 and 6 years old. It is not expected that the children in your class will necessarily be able to perform all these skills, since some may be beyond their developmental level. Please answer each question to the best of your knowledge, even if you're not sure of the answer.

These items are designed to measure what the child usually or habitually **does**, not what the child **can** do. For each item, score 2 if the child usually or habitually performs the activity, **or** if the activity was performed satisfactorily in the past but the child has outgrown the need to perform it. Score 1 if the child sometimes or partially performs the activity. Score 0 if the child never or very seldomly performs the activity. Please note that there are some "yes/no" items which may **only** be scored 2 or 0.

		Never	**Sometimes**	**Usually**
1.	Gestures appropriately to indicate "yes", "no", and "I want".	0	1	2
2.	Listens attentively to instructions. (i.e. looks at the teacher and usually does not interrupt)	0	1	2
3.	Demonstrates understanding of the meaning of "yes" or "okay". (For example, smiles or proceeds with an activity.)	0	1	2
4.	Follows instructions requiring an action and an object. (Ex. "Get your book")	0	1	2
5.	Points accurately to at least one major body part when asked. (Examples are head, face, eyes, nose, mouth, arms, and legs.)	0	1	2
6.	Uses first names or nicknames of siblings, friends or peers, or states their names when asked.	0	1	2

		Never	Sometimes	Usually
7.	Uses phrases containing a noun and a verb, or two nouns. (Ex. "Go home", "Mike chair")	0	1	2
8.	Names at least 20 familiar objects without being asked. [SCORE ONLY 0 OR 2]	0		2
9.	Listens to a story for at least five minutes.	0	1	2
10.	Indicates preference, vocally or by gesture, when offered a choice. (For example, "Would you like to go to the store or watch TV?")	0	1	2
11.	Says at least 50 recognizable words. [SCORE ONLY 0 OR 2]	0		2
12.	Spontaneously relates experiences in simple terms. (The child may use single words or simple phrases, such as "cook", "doggy", and "play ball" to score 2)	0	1	2
13.	Delivers a simple message. (Ex. "We're going to the playground")	0	1	2
14.	Uses sentences of four or more words. (Correct grammar and articulation are not required to score 2.)	0	1	2
15.	Points accurately to all body parts when asked. (The child points to head, face, eyes, nose, mouth, arms, legs, hands, feet, fingers, elbows, teeth, ears, tongue, neck, knees, toes, stomach, and hair.) [SCORE ONLY 0 OR 2]	0		2
16.	Says at least 100 recognizable words. [SCORE ONLY 0 OR 2]	0		2
17.	Speaks in full sentences containing a subject and a verb, using generally correct grammar.	0	1	2
18.	Uses "a" and "the" in phrases or sentences. (Examples are "a dog" and "the ball". If the child uses either "a" or "the" appropriately, but not both, score 1.)	0	1	2
19.	Follows instructions in "if-then" form. (Ex. "If your hands are dirty, then wash them)	0	1	2
20.	States own first and last name when asked.	0	1	2
21.	Asks questions beginning with "what", "where", "who", "why", and "when". (The child must use all of these words.) [SCORE ONLY 0 OR 2]	0		2

		Never	Sometimes	Usually
22.	States which of two objects not present is bigger. (Ex. The child answers correctly when asked, "Which is bigger, a cat or a mouse?")	0	1	2
23.	Relates experiences in detail when asked. (The amount of detail, not grammar or articulation, is important.)	0	1	2
24.	Uses either "behind" or "between" as a preposition in a phrase. (Ex. "behind the desk" or "between the table and the window")	0	1	2
25.	Uses "around" as a preposition in a phrase. (Ex. "around the corner")	0	1	2
26.	Uses phrases or sentences containing "but" **and** "or". (Ex. "Mike or Sue" and "I want to go, but Jane wants to stay here." Score 1 if the child uses **either** "but" or "or" but not both.)	0	1	2
27.	Articulates clearly, without sound substitutions. (Examples of sound substitutions are "frow" for throw and "wabbit" for rabbit. If there is one sound substitution, score 1.)	0	1	2
28.	Tells basic parts of popular story, fairy tale, lengthy joke, or television show plot without being prompted.	0	1	2
29.	Recites all letters of the alphabet from memory. (Letters may be in or out of sequence. If child sings the "ABC" song, but does not say the alphabet, score 1)	0	1	2
30.	Reads at least three common signs. (Ex. "In", "Push", "Walk". If child recognizes signs by shape or symbol, but does not read the words, score 1)	0	1	2
31.	States month and day of birthday when asked. (If child states either month or day, but not both, score 1)	0	1	2
32.	Uses irregular plurals which require a change in form other than adding an s to the singular. (Ex. "children", "geese") (If the child uses most irregular plurals correctly, score 2.)	0	1	2
33.	Prints or writes own first and last name.	0	1	2

			Never	Sometimes	Usually
34.	States telephone number when asked. (The area code is **not** required to score 2.) [If there is no telephone in child's residence, score N for No opportunity]	N	0	1	2
35.	States complete home address, including city and state, when asked. (Zip code not required to score 2)		0	1	2
36.	Reads at least 10 words silently or aloud. (Must show understanding of meaning of words, not just pronounce them)		0	1	2
37.	Prints or writes at least 10 words from memory.		0	1	2
38.	Expresses ideas in more than one way, without assistance. (For example, the child says, "She's a nice person....I mean cheerful, happy, friendly")		0	1	2
39.	Reads simple stories aloud to a listener. (For example, The Cat in the Hat or Little Bear)		0	1	2
40.	Prints or writes simple sentences of three or four words. (Perfect grammar or spelling is not necessary.)		0	1	2
41.	Attends to school or public lecture for more than 15 minutes. (If the child attends only to "interesting" lectures, score 1.)		0	1	2
42.	Reads on own initiative. (Interest and spontaneous selection of a book are important.)		0	1	2
43.	Reads books of at least second-grade level silently or aloud. (Ability is more important than interest.)		0	1	2
44.	Arranges items or words alphabetically by first letter. (The child must have independently arranged index cards or other items alphabetically, or have alphabetized a list of words, at least twice to score 2.)		0	1	2
45.	Prints or writes short notes or messages. (The child must have independently written at least three notes or messages to score 2 and one note to score 1.)		0	1	2
46.	Gives complex directions to others. (For example, gives directions to a place some distance away.)		0	1	2

		Never	Some-times	Usually
47.	Writes beginning letters. (The child must have written and mailed at least two letters of at least two letters of at least three sentences each.) [SCORE ONLY 0 OR 2]	0		2
48.	Reads books of at least fourth-grade level silently or aloud. (Ability is more important than interest.)	0	1	2
49.	Writes in cursive most of the time. (If the child writes only his or her name in cursive, score 0.) [SCORE ONLY 0 OR 2]	0		2

ID________________
(please leave blank)

THE ADAPTIVE SOCIAL BEHAVIOR INVENTORY

Teacher:__________________________

School:__________________________

Date:__________________________

Child's Name:______________________________________

Birth Date:_______________ **Gender:**____ **Race:**_______

Social Security Number:______________________________

Please circle the number that best describes the child. Please answer each question to the best of your knowledge, even if you are not sure.

NEVER					ALWAYS		
1	2	3	4	5	6	1.	Understands others' feelings, like when they are happy, sad or mad
1	2	3	4	5	6	2.	Is helpful to other children
1	2	3	4	5	6	3.	Is obedient and compliant
1	2	3	4	5	6	4.	When you give him/her an idea for playing, he/she frowns, shrugs shoulders, pouts or stamps foot
1	2	3	4	5	6	5.	Follows rules in games
1	2	3	4	5	6	6.	Gets upset when you don't pay enough attention
1	2	3	4	5	6	7.	Is sympathetic toward other children's distress, tries to comfort others when they are upset
1	2	3	4	5	6	8.	Waits her/his turn in games or other activities
1	2	3	4	5	6	9.	Is open and direct about what he/she wants
1	2	3	4	5	6	10.	Cooperates with your requests

NEVER					ALWAYS	
1	2	3	4	5	6	11. Can easily get other children to pay attention to him/her
1	2	3	4	5	6	12. Says nice or friendly things to others
1	2	3	4	5	6	13. Will join a group of children playing
1	2	3	4	5	6	14. In social activities, tends to just watch others
1	2	3	4	5	6	15. Follows classroom rules
1	2	3	4	5	6	16. Says "please" and "thank you" when reminded
1	2	3	4	5	6	17. Asks or wants to go play with other children
1	2	3	4	5	6	18. Is calm and easy-going
1	2	3	4	5	6	19. Plays games and talks with other children
1	2	3	4	5	6	20. Shares toys or possessions
1	2	3	4	5	6	21. Teases other children, calls them names
1	2	3	4	5	6	22. Is confident with other people
1	2	3	4	5	6	23. Prevents other children from carrying out routines
1	2	3	4	5	6	24. Tends to be proud of things she/he does
1	2	3	4	5	6	25. Accepts changes without fighting against them or becoming upset
1	2	3	4	5	6	26. Bullies other children
1	2	3	4	5	6	27. Is interested in many and different things
1	2	3	4	5	6	28. Is worried about not getting enough
1	2	3	4	5	6	29. Is bossy, needs to have his/her way
1	2	3	4	5	6	30. Enjoys talking with you

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Never					**Always**	
1	2	3	4	5	6	31. Eager, enthusiastic about classroom activities
1	2	3	4	5	6	32. Able to begin and complete classroom tasks
1	2	3	4	5	6	33. Adaptable to changing classroom routines
1	2	3	4	5	6	34. Willingly participates in classroom activities
1	2	3	4	5	6	35. Enjoys school
1	2	3	4	5	6	36. Achievement and development appropriate for age
1	2	3	4	5	6	37. Completes activities and projects in time alloted
1	2	3	4	5	6	38. Alert and attentive

Adapted from Schulte & Osborne (1990)

TEACHER ______________________ **SCHOOL** ______________________

CHILD'S NAME ______________________ **BIRTHDATE** ____________

SOCIAL SECURITY NUMBER ____________ **GENDER** ________ **RACE** ________

DATE ______________________

SOCIAL SKILLS QUESTIONNAIRE GRADES K-6 TEACHER FORM (Modified)

Gresham, F.M. and Elliot, S.N. (1990), AGS, Inc.

Directions: This questionnaire is designed to measure **how often** a student exhibits certain social skills and **how important** those skills are to you for success in your classroom. Ratings of problem behaviors and academic competence are also requested.

SOCIAL SKILLS	How Often? Never	 Sometimes	 Very Often
1. Controls temper in conflict situations with peers.	0	1	2
2. Introduces herself or himself to new people without being told.	0	1	2
3. Appropriately questions rules that may be unfair.	0	1	2
4. Compromises in conflict situations by changing own ideas to reach agreement.	0	1	2
5. Responds appropriately to peer pressure.	0	1	2
6. Says nice things about himself or herself when appropriate.	0	1	2
7. Invites others to join in activities.	0	1	2
8. Uses free time in an acceptable way.	0	1	2
9. Finishes class assignments within time limits.	0	1	2
10. Makes friends easily.	0	1	2
11. Responds appropriately to teasing by peers.	0	1	2
12. Controls temper in conflict situations with adults.	0	1	2
13. Receives criticism well.	0	1	2
14. Initiates conversations with peers.	0	1	2
15. Uses time appropriately while waiting help.	0	1	2
16. Produces correct schoolwork.	0	1	2
17. Appropriately tells you when he or she thinks you have treated him or her unfairly.	0	1	2
18. Accepts peers' ideas for group activities.	0	1	2

PROBLEM BEHAVIORS	How Often?		
	Never	Sometimes	Very Often
19. Gives compliments to peers.	0	1	2
20. Follows your directions.	0	1	2
21. Puts work materials or school property away.	0	1	2
22. Cooperates with peers without prompting.	0	1	2
23. Volunteers to help peers with classroom tasks.	0	1	2
24. Joins ongoing activity or group without being told to do so.	0	1	2
25. Responds appropriately when pushed or hit by other children.	0	1	2
26. Ignores peer distractions when doing class work.	0	1	2
27. Keeps desk clean and neat without being reminded.	0	1	2
28. Attends to your instructions.	0	1	2
29. Easily makes transition from one classroom activity to another.	0	1	2
30. Gets along with people who are different.	0	1	2
31. Fights with others.	0	1	2
32. Has low self esteem.	0	1	2
33. Threatens or bullies others.	0	1	2
34. Appears lonely.	0	1	2
35. Is easily distracted.	0	1	2
36. Interrupts conversations of others.	0	1	2
37. Disturbs ongoing activities.	0	1	2
38. Shows anxiety about being with a group of children.	0	1	2
39. Is easily embarrassed.	0	1	2
40. Doesn't listen to what others say.	0	1	2
41. Argues with others.	0	1	2
42. Talks back to adults when corrected.	0	1	2
43. Gets angry easily.	0	1	2
44. Has temper tantrums.	0	1	2
45. Likes to be alone.	0	1	2

PROBLEM BEHAVIORS	How Often? Never	Sometimes	Very Often
46. Acts sad or depressed.	0	1	2
47. Acts impulsively.	0	1	2
48. Fidgets or moves excessively.	0	1	2

ACADEMIC COMPETENCE

The next nine items require your judgments of this student's academic or learning behaviors as observed in your classroom. Compare the student with other children who are in the same classroom.

Rate all items using a scale of 1 to 5. Circle the number that best represents your judgments. The number 1 indicates the lowest or least favorable performance, placing the student in the lowest 10% of the class. Number 5 indicates the highest or most favorable performance, placing the student in the highest 10% compared with other students in the classroom.

	Lowest 10%	Next Lowest 20%	Middle 40%	Next Highest 20%	Highest 10%
49. Compared with other children in my classroom **overall academic performance** of this child is:	1	2	3	4	5
50. In **reading**, how does this child compare with other students?	1	2	3	4	5
51. In **mathematics**, how does this child compare with other students?	1	2	3	4	5
52. In terms of grade-level expectations, this child's skills in **reading** are:	1	2	3	4	5
53. In terms of grade-level expectations, this child's skills in **mathematics** are:	1	2	3	4	5
54. This child's **overall motivation** to succeed academically is:	1	2	3	4	5
55. This child's **parental encouragement** to succeed academically is:	1	2	3	4	5
56. Compared with other children in my classroom, this child's **intellectual functioning is**:	1	2	3	4	5
57. Compared with other children in my classroom, this child's **overall classroom behavior is**:	1	2	3	4	5

Please check to be sure all items have been marked.

Evaluation of Public Preschool Programs in North Carolina

Executive Summary

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November 23, 1993

A Study Conducted for the North Carolina
Department of Public Instruction

This report presents the results of a statewide study of public preschool practices in North Carolina conducted between 1991-1993 by researchers at the Frank Porter Graham Child Development Center. This evaluation of current preschool practices was commissioned by the Department of Public Instruction to help guide continued improvements of current programs as well as to help set directions for the ever-expanding numbers of preschool programs. We surveyed 170 public preschool administrators and teachers, conducted 63 classroom visits, and obtained preschool ratings on over 1000 preschool children. We followed 260 of these preschoolers into kindergarten, and compared them with 288 of their peers who had attended public preschools, Head Start programs, other community child care programs or no programs. A summary of our findings and recommendations is presented in this report. A more detailed analysis of all methods, procedures, and results is available from the authors at the Frank Porter Graham Child Development Center, University of North Carolina at Chapel Hill.

THE PURPOSE OF THIS STUDY was to evaluate public preschool programs in North Carolina. In the past six years, in response to the growing need for accessible, affordable, and appropriate preschool programs, the number of public school-based pre-kindergarten classes has increased rapidly, typically focused on at-risk children. In addition to standard early childhood center-based programs, which are typically funded with Chapter 1 monies, several preschool programs with an extra family emphasis have been initiated, often through the use of Chapter 2, Even Start, or private foundation funds. Although the philosophical and empirical research base supporting the development of pre-kindergarten programs is sound, no systematic study of these new North Carolina programs has been conducted.

The intent of this evaluation was to answer four broad questions about several aspects of these public pre-kindergarten programs:

What are the characteristics of pre-kindergarten programs?

What are the characteristics of the children and families being served by the pre-kindergarten programs?

What are the short-term outcomes for children who attended public preschool?

What are the kindergarten outcomes for children who attended public preschool compared to children who had other preschool experiences (Head Start, other child care, no group care)?

Types of Preschool Programs

Most of the preschool programs conducted in North Carolina and included in this study utilized Chapter 1 funds to provide daily educational experiences for young children, typically using the North Carolina curriculum *Circle of Childhood.* Most programs attempted to involve parents in many ways—visits, conferences, volunteering—but most Chapter 1 programs did not usually have extra resources for parent involvement beyond what their school might have (i.e., a family coordinator for the whole school). We will refer to these Chapter 1 programs as "standard" pre-kindergarten classes.

Several school systems conducted pre-kindergarten classes with family-involvement components that went beyond the services typically provided in the standard Chapter 1 pre-kindergartens. These programs—Even Start, Chapter 1 Enhancement, Chapter 2, Department of Education grant pilot, and Kenan—marshalled extra resources to add some special family services such as parenting education or adult literacy training, often requiring some aspect of parent participation. In this report these will be referred to as "family-focused" pre-kindergarten classes.

Procedures and Participants

The evaluation was comprised of several data collection phases, conducted between March, 1991, and April, 1993. Table 1 provides an overview of all phases of the study. The first component of the research consisted of a survey of all public preschool administrators and teachers in North Carolina. Much of the descriptive information about programs and children came from these surveys: type of program, the population served, the services provided, classroom characteristics, staff characteristics, and respondents' beliefs about strengths and weaknesses of the program.

All 51 North Carolina public preschool program administrators and 173 teachers representing each public preschool program in operation in the 1990-91 school year were sent questionnaires. These programs were located in 44 local education agencies (LEAs). Surveys were returned by 82% of the administrators and 74% of the teachers. Only one of the 44 LEAs provided neither administrator nor teacher information.

Classroom Observations

The second component of the study consisted of observations of a sample of 63 preschool classrooms. This phase of the study obtained information about the quality and developmental appropriateness of public preschool classrooms and some cognitive and behavioral characteristics of the children who attended them.

After dividing all existing North Carolina preschool classes into groups based on the total number of pre-kindergarten classes in the LEA (1, 2, 3-7, 8-14, or 35), 50 standard Chapter 1 classes were randomly selected to ensure representation from each group. To assure a reasonable number of family-focused programs in the sample, this subgroup was somewhat oversampled to obtain the participation of 13 pre-kindergarten classes that were Even Start, Chapter 1 Enhancement, Chapter 2, and U.S. Department of Education grant pilot classrooms.

For each of the 63 preschool classrooms, one observation was conducted in the Fall of 1992. Each visit was approximately four hours long, during which a trained assessor completed two observational instruments, the *Early Childhood Environment Rating Scale* (ECERS) (Harms & Clifford, 1980) and the *Five-Minute Interaction* (FMI) (Stallings, 1977). The ECERS was the primary measure of classroom developmental appropriateness, the measure used to index the overall quality of the program. This scale comprehensively assesses the day-to-day care and educational experiences provided to children. The ECERS is designed so that a score of 1 on an item represents an inadequate situation, 3 is minimal, 5 is good, and 7 is excellent. Mean item ratings can be calculated for individual subscales and for the total scale. We considered an overall score of 5.0 or above to be indicative of a good, developmentally appropriate classroom, based on both the design of the scale and agreement of the item descriptions with other works, such as the NAEYC statement on developmentally appropriate practices (Bredekamp, 1987). Scores within half a point of 5.0 (that is, 4.5-4.9) were considered "close to the target." That is, for this and other studies, we have considered 5.0 to be the criterion score to be considered developmentally appropriate, with programs scoring below that mark to be encouraged to make some classroom changes.

Table 1
Overview of Study

Type of Data	Number	Time Period
Administrator Surveys	42	Spring 1991
Teacher Surveys	128	Spring 1991
Classroom Visits	63	Fall 1991
Early Childhood Environment Rating Scale		
Five-Minute Interactions		
Preschool Teacher Ratings	1022 children[a] (61 classes)	Fall 1991 Spring 1992
Vineland Adaptive Behavior Scale		
Adaptive Social Behavior Inventory		
Attitude to School Items		
Kindergarten Assessments	592 children	Fall/Winter 1992-93
Peabody Picture Vocab. Test-R	276 Public preschool	
Woodcock-Johnson Tests of Achievement (Reading & Math)	97 Head Start	
	99 Other preschool	
	120 No preschool	
Kindergarten Teacher Ratings	548 children	Fall/Winter 1992-93
Social Skills Questionnaire		
Vineland Communication Domain		

[a] Of the 1022 children on whom fall or spring preschool ratings were gathered, 748 children from 53 classes had both fall *and* spring ratings.

The *Five-Minute Interaction* (FMI) records social interactions in the classroom according to the initiator, recipient, and type of interaction across 13 categories. The recording unit is based on conversational turns, rather than time, so that codes correspond to actual turns or sentences. A factor analysis of the FMI resulted in three teacher factors: Teacher Directiveness including commands or requests, general comments, and task-related comments; Child-oriented language consisting of open-ended questions, responses, and praise; and Non-elaborative language including direct questions and acknowledgments.

Ratings of Children by Pre-kindergarten Teachers

At the time of the pre-kindergarten classroom observations in the fall of 1991 and again at the end of the school year, teachers were asked to complete two developmental assessments for each child in the class: one on communication development and one on social behavior. An adapted questionnaire form of the Communication Domain of the *Vineland Adaptive Behavior Scale* (Sparrow, Balla, & Cicchetti, 1984) was used to provide a measure of children's cognitive development. The *Adaptive Social Behavior Inventory* (ASBI) (Hogan, Scott, & Bauer, 1992) provided information about children's social development. This instrument consists of 30 items in three subscales: Express, Comply, and Disrupt. In addition, eight questions about children's attitudes toward school adapted from *The Teachable Pupil Attribute Scale* (Kornblau & Keogh, 1980) were asked.

Assessments of Pre-kindergarten Graduates and Their Peers in Kindergarten

To address the fourth research question concerning public preschoolers' outcomes in kindergarten compared to their peers with different preschool experiences, the study followed-up a random sample of public preschool graduates when they were in kindergarten and compared them to children with other pre-kindergarten experiences. A random sample of 276 public preschool graduates from the observed preschool classes was chosen. Although they were assessed and rated, 56 of these children were not receiving free or reduced-price lunch (our proxy measure for low-SES), so they were not included in the analyses. The analyses included children from both the standard (n=186) and family-focused (n=34) classes. Then, comparison samples of children from the same kindergarten classes were chosen based on information provided by the kindergarten teacher about status of lunch purchase (free, reduced-, or full-price), gender of child, and their care situation in the year prior to kindergarten (Head Start, community group daycare, no group care). Table 2 shows the numbers of children in the different groups and some demographic characteristics of the sample. A total of 592 children were assessed in November-January of their kindergarten year, with 536 being from families in poverty.

Table 2

Demographic Characteristics of Kindergartners with Different Preschool Experiences

	Standard Chapter 1 (n=186)	Family-focused (n=34)	Head Start (n=97)	Comm. Child Care (n=99)	No Group Care (n=120)
Gender, % male	50.5	35.3	50.5	46.5	48.3
Ethnicity, %					
Black	75.8	67.6	89.7	67.7	62.2
White	20.4	26.5	10.3	30.3	34.5
Native American	2.7	5.9	0	2.0	0.8
Asian	0.5	0	0	0	0.8
Hispanic	0.5	0	0	0	1.7
Mean age, months	68.4	68.9	68.6	68.6	68.4

Five assessors were trained to administer the child assessments in a day-long training session at FPG and then in individualized practice. Two subscales of the *Woodcock-Johnson Tests of Achievement* (WJ-R) (Woodcock & Johnson, 1989) were used to provide a standardized assessment of children's abilities in two basic skills areas, reading and math. The *Peabody Picture Vocabulary Test-Revised* (PPVT-R) (Dunn & Dunn, 1981) was also used. It is a nonverbal assessment of receptive vocabulary. The Project Director contacted all the participating schools to determine their willingness to participate in the kindergarten follow-up. An assessor was assigned to each school, contacted the teacher, and scheduled a convenient time to visit the school between November, 1992 and January, 1993.

Ratings of Children by Kindergarten Teachers

Following the school visits, the kindergarten teachers rated the children on two measures. An adapted questionnaire form of the Communication Domain of the *Vineland Adaptive Behavior Scale* (Sparrow, Balla, & Cicchetti, 1984) was used to assess children's cognitive development. The *Social Skills Questionnaire* (version for elementary school teachers) (Gresham & Elliott, 1990) was used to measure teachers' ratings of children's classroom behaviors. It contains 3 scales: Social Skills, Problem Behaviors, and Academic Competence. Questionnaires were returned by 87% of the teachers.

Results

Results are organized by the four main research questions that guided the study.

Question 1. What are the characteristics of pre-kindergarten programs?

Eligibility and selection criteria:

-More than half of the programs used standardized screening assessments to determine eligibility. (Chapter 1 requires an "objective measure.").

-The LAP-D was used by more than 50% of the programs; observation-based assessment, the DIAL-R, the PPVT, and the Preschool Inventory were used by several programs.

-About 25% of the programs used the age of the child as a key criteria.

-Parent education was also used by a number of programs (17%).

-The terms "at-risk" and "educationally deprived," although used in program descriptions and Chapter 1 regulations, are reported as not applicable by many programs and defined in varied ways by the programs that do use those terms.

Preschool consultants and services:

-Speech/language therapists were available to almost all of the programs and were reported by teachers as being used frequently.

-Early education specialists, psychologists, and social workers were available at somewhat more than half of the sites.

-Parent coordinators were also available at more than half of the sites.

-Fewer than one-third of the administrators reported the availability of physical therapists or occupational therapists, and very few teachers reported using these services, in accord with the reportedly few children with special needs (<6%) in these programs.

Family services:

-Most of the programs reported the availability of parent education (74%) and social services referrals (63%).

-Adult basic education or literacy training was available at nearly half of the programs.

-According to teachers, many of these available family services were not used frequently.

Curriculum:

-A large majority of the programs (88%) used *Circle of Childhood* as their only curriculum or one of their two main curricula.

-The High Scope curriculum materials were considered the primary curriculum by 7% of programs and supplementary curriculum by another 12%.

Location of classrooms:

-In buildings housing only preschool classes, 19%

-In buildings with other grades, 88%

-In other locations, 10% (some LEAs operated programs in more than one type of site).

Transportation of children:

-24% of programs transported all pre-kindergartners; 87% of these used regular school buses.

-12% of programs transported none of the children.

-The remaining 64% of programs reported transporting some children.

Best aspects:

-More than half of administrators and teachers cited opportunities for parent involvement as one of the best aspects of their program.

-Administrators also frequently mentioned staff expertise, the provision of a "developmentally appropriate" program, and the curriculum and activities.

-Teachers believed that the child-centeredness of their program and the facilities and curriculum were also positive aspects.

Barriers:

-Problems with the facilities, including space, materials, or equipment was the most frequently cited barrier by administrators.

-Teachers most frequently cited the difficulty of parent involvement as a barrier, followed by physical facilities and materials and support from others outside the program.

-Parent involvement was sometimes mentioned as both a barrier to good program delivery and a positive aspect, suggesting that opportunities for parent involvement are perceived as a program strength, but that obtaining or maintaining parent involvement is difficult.

Plans for new classes:

-38% of administrators were planning to open new preschool classes in the following year (1992).

Year class began:

-Approximately two-thirds of public pre-kindergarten classes began in 1988 or later.

Times of program operation:

-Programs operated for an average of 6.1 hours per day.

-Most programs (93%) served children Monday through Friday.

-Most programs served children between 8 and 12 months a year, with a mean of 10.0 months.

-Before-school care was available to 19% of the classes, after-school care to 32%, and summer programs to 18%.

-The majority of these programs did not report offering care outside of the normal school day.

Meals provided:

-About two-thirds of the sites provided breakfast and about one-third provided morning snack.

-Lunch was provided at most of the sites and afternoon snack at about half.

Demographic characteristics of staff:

-Pre-kindergarten teachers had taught for several years (mean = 12.7 years), although only a few years had been spent teaching children of preschool age (mean = 4.4 years)

-Almost two-thirds of the teachers had a Bachelor degree and about one-third had obtained a Masters.

-Most teachers (71%) held Early Childhood certification, and 45% had the Pre-K/K Add-on certificate.

-Less than 1% of pre-kindergarten teachers and assistant teachers were male.

-61% of the teachers were White, 32% Black, and 7% Native American.

-43% of the assistants were White, 48% Black, and 9% Native American or other races.

Program quality, overall:

-There is a wide range of quality and appropriateness of preschool classes in North Carolina, with many functioning in a manner that meets standards of developmental appropriateness (See Figure 1).

-The overall score on the ECERS was just below the criterion (4.8).

-38% of public preschool classrooms met or exceeded our standard of developmental appropriateness (at least a 5.0 on the ECERS).

-27% of pre-kindergarten classrooms were within half a point of 5.0, a reachable target with a little more attention to certain developmental areas (e.g., more language interactions, more variety in activities, more child choice).

-However, 35% were rated as below 4.5.

Program quality, standard Chapter 1 vs. family-focused:

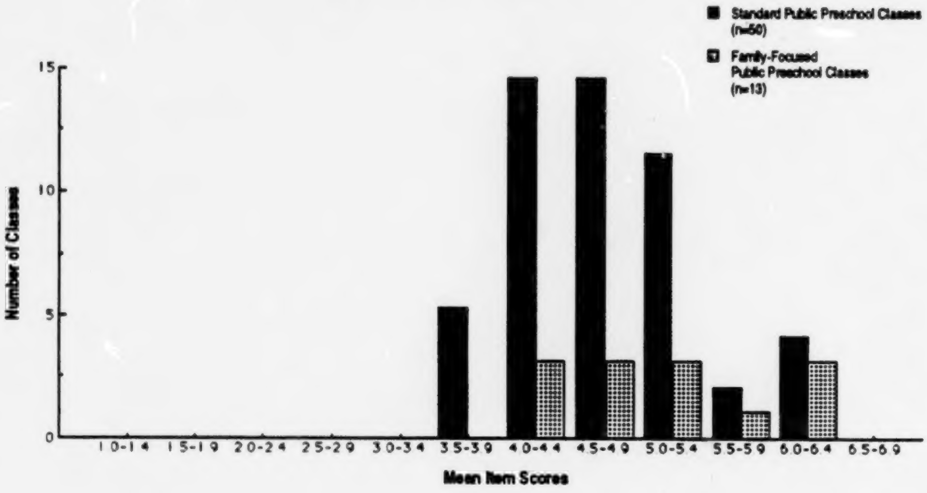
-The overall score for the family-focused classes (5.2) met the criterion, and was significantly higher than that of the standard classes (4.7).

-The ranges of the two groups overlapped considerably (See Figure 1)

-A higher proportion of the family-focused classes were rated in the top range of the ECERS and fewer were rated in the bottom range.

-No family-focused class was rated below 4.0, while 10% of the standard classes were rated this low.

Figure 1
Distribution of ECERS Scores



- Although the more global rating of classroom quality (ECERS) was higher in the special family-focused preschools, teacher language as measured by the FMI did not differ.

Program quality, subscale and item scores:

- For the complete sample, the Adult needs and Creative activities subscales met the criterion (see Figure 2 and Table 3).
- Fine and gross motor, Social development, Personal care, and Furnishings and display) subscales were within half a point.
- The Language/reasoning subscale was lowest of all subscales and considerably below the target score of 5.
- The full range of scores from 1 to 7 was found for many items, although for several items no classes scored at the lower end of the scale.
- Cultural awareness was consistently the lowest scoring item on the scale, with a mean score just reaching minimal.

Program quality, teacher language:

- Teachers asked direct questions more frequently than any other type of verbal behavior during center time.
- During center time, children primarily made task-related comments and responded to questions.
- Very few of teachers' interactions consisted of open-ended questions, averaging about 5% or less during each type of activity observed.

Relationships among quality indicators:

- In classes that were rated more developmentally appropriate on the ECERS, teachers made greater use of open-ended questions (FMI).

Predictors of program quality:

- -The differences in quality among classes were not related to the number of preschool classes in the district, nor to a variety of demographic characteristics, such as teacher experience, parent involvement, number of children in the class, or distribution of children by race or sex.
- -Although different in other areas, these programs are similar in one important way: they all wanted to and chose to invest resources in new, model programs for 4-year-olds.

Figure 2
Mean ECERS Subscale Scores
for Standard and Family-Focused Public Preschool Classes

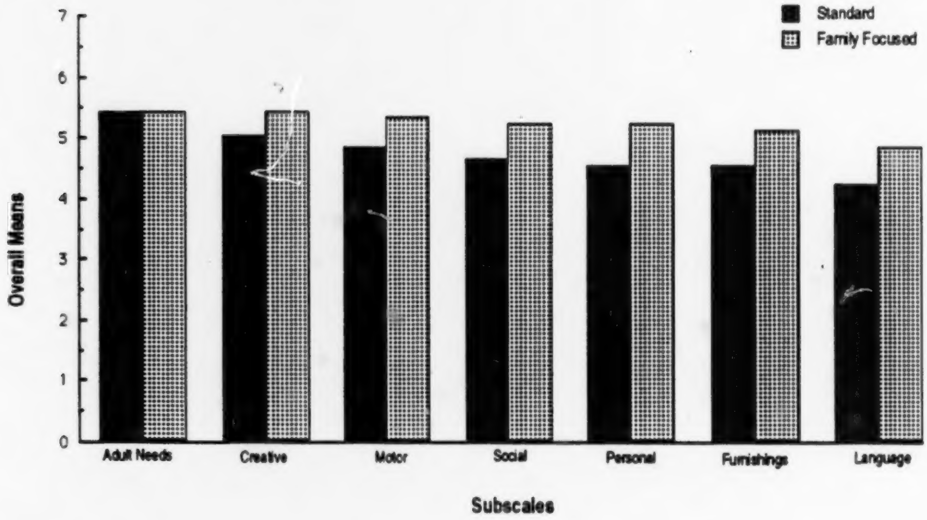


Table 3

Mean Ratings on the Early Childhood Environment Rating Scale

All Classes

n=63

Item	Mean	SD	Range
Adult personal area	6.4	1.1	2-7
Provisions for parents	5.7	0.7	3-7
Adult meeting area	5.5	1.2	3-7
Professional opportunities	3.9	1.9	2-7
Adult Needs Subscale	**5.4**	**0.7**	**3.8-6.8**
Music	5.9	0.6	5-7
Creative supervision	5.8	1.0	3-7
Creative schedule	5.7	1.3	1-7
Sand/water	5.1	1.0	3-7
Blocks	4.9	1.7	2-7
Art	4.7	1.8	1-7
Dramatic play	3.7	0.9	3-7
Creative Activities Subscale	**5.1**	**0.7**	**3.4-6.9**
Gross motor time	5.7	1.3	3-7
Fine motor activities	5.6	1.4	2-7
Gross motor supervision	5.3	0.9	4-7
Fine motor supervision	5.1	1.2	3-7
Gross motor space	4.3	0.9	3-7
Gross motor equipment	3.7	1.0	1-7
Fine/Gross Motor Subscale	**4.9**	**0.8**	**3.0-6.8**
Exceptional provisions	5.7	1.4	2-7
Group time	5.3	1.5	1-7
Tone	5.2	1.3	2-7
Free play	5.0	1.5	1-7
Space to be alone	3.9	1.4	1-7
Cultural awareness	3.1	0.8	2-7
Social Development Subscale	**4.7**	**0.9**	**3.0-7.0**
Nap/Rest	5.8	1.1	3-7
Greeting/departing	5.4	1.1	1-7
Meals/snacks	4.6	1.2	2-7
Personal grooming	4.1	0.8	2-7
Toileting	3.4	2.2	1-7
Personal Care Subscale	**4.7**	**0.8**	**3.3-6.8**
Furnishings for relaxation	5.7	1.5	3-7
Display	4.6	1.3	3-7
Furnishings for routine care	4.5	2.0	1-7
Room arrangement	4.4	1.5	1-7
Furnishings for learning activities	4.1	2.0	1-7
Furnishings/Display Subscale	**4.6**	**1.1**	**2.6-7.0**
Using language	4.5	1.4	3-7
Understanding language	4.4	1.2	2-7
Informal language	4.3	1.6	2-7
Reasoning	4.1	1.3	2-7
Language/Reasoning Subscale	**4.3**	**1.1**	**2.5-7.0**
Total Child Items	**4.8**	**0.7**	**3.3-6.4**
Overall	**4.8**	**0.7**	**3.5-6.4**

Question 2. What are the characteristics of the children and families being served by the pre-kindergarten programs?

Demographic characteristics of children:

-About half the students were boys (52%) and about half (48%) were girls.

-Class size ranged from 9 to 22, with a mean of 15.5.

-63% of pre-kindergarten children were Black; 28% White, 6% Native American, and 3% other races.

-Teachers identified 87% of the children as educationally deprived, 32% as at-risk, and 5% as handicapped (not always mutually exclusive categories to teachers).

Kindergarten placement:

-At the end of the pre-kindergarten year, teachers predicted that 91% of the age-eligible children were heading to kindergarten, 8% to pre-kindergarten/transition kindergarten classes, and 1% to other placements.

-All of the expected retentions or placements in transition kindergarten programs were accounted for by 12% of the classes.

Parent involvement:

-Almost 90% of the parents attended parent-teacher conferences and visited the classroom.

-Fewer parents participated in parent meetings (67%) or helped in the classroom (51%).

Question 3. What are the short-term outcomes for children who attended public preschool?

Cognitive development:

-In the fall of their pre-kindergarten year, the average child was 19 months delayed in communication skills (see Table 4), as rated by teachers on the Vineland Communication Domain.

-Children entering the family-focused programs were significantly less delayed than those entering the standard Chapter 1 preschool programs. (Parents in these programs usually had to agree to certain types of parent education, or literacy or job training.)

-By the spring of their pre-kindergarten year, however, the communication skills of the two groups were rated about the same; children in the family-focused programs were still about 12 months delayed and the children in the standard Chapter 1 classes had made some gains so that they were only 13 months delayed.

-Differences between boys and girls were statistically significant for both fall and spring ratings on the Vineland Communication Domain, with girls rated in the more positive direction than boys.

-White children were rated higher than non-white children on the Communication Domain, but only in the fall; the scores of both groups of children had increased by the spring, more so for non-white children than for white children.

Social development:

-While there were some individual children who received maximum scores on the ASBI scale, the group as a whole was somewhat delayed in their social as well as cognitive development.

-Children in the family-focused classes were rated significantly higher by their teachers on all behavior ratings and in their attitudes to school at both rating times, fall and spring, in comparison to children in the standard Chapter 1 classes (See Table 4).

-Girls were rated more positively than boys at both rating times on their compliance, expressiveness, and attitudes to school; boys and girls were not significantly different on disruptiveness, as rated by their teachers.

-No differences were found in the teacher ratings of non-white and white children in either the fall or spring on any of the behavioral measures.

Table 4
Means and SDs of Teacher Ratings of Children in Standard (n=639) and Family-Focused (n=137) Public Preschool Classrooms[1]

	Fall		Spring	
	Standard	Fam-Focus	Standard	Fam-Focus
Child's chronological age (mo.)				
	55.0	53.1***	59.9	59.0
	(3.8)	(5.8)	(3.9)	(5.6)
Vineland Communication Domain				
Standard score	74.7	84.4****	82.2	84.6*
	(13.3)	(14.3)	(13.6)	(12.5)
Age equivalent[2] (in months)	34.9	41.1	45.4	46.7
Adaptive School Behavior Inventory				
Comply	4.3	4.6**	4.6	4.8**
	(.9)	(1.0)	(.9)	(.9)
Express	4.5	4.9****	4.8	5.1****
	(.8)	(.8)	(.7)	(.6)
Disrupt	2.6	2.2***	2.6	2.2****
	(1.1)	(1.1)	(1.2)	(1.0)
Attitude to School				
	4.6	4.9****	4.9	5.1***
	(.9)	(.8)	(.9)	(.7)

[1] Only children with both fall and spring data are included here.

[2] This value was not tested for difference between groups.

Significance levels for t-tests of difference between Standard and Family-Focused classes:

* p < .05
** p < .01
*** p < .001
**** p < .0001

Relationships between program quality and preschool outcome:

- The Appropriate Caregiving factor of the ECERS was significantly related to the Vineland communication outcome measure. Quality had the strongest positive effect on outcomes for white girls, with a less strong effect for white boys.
- The effects of quality on outcomes for non-white children were weaker, with a positive relationship for non-white girls and a negative relationship for non-white boys.
- For the ASBI Comply subscale, there were no significant relationships to quality as measured by the ECERS or the FMI.
- Both the ECERS mean score and the ECERS Developmentally appropriate activities factor were significantly predictive of higher ASBI Express scores at the end of the year for white children, but not for non-white children.

Question 4. What are the kindergarten outcomes for children who attended public preschool as compared to economically disadvantaged children who had other preschool experiences (Head Start, other community care, home care)?

Cognitive outcomes:

- The WJ-R Math achievement and PPVT-R receptive language scores of children who attended community child care before kindergarten were significantly higher than the scores of children in the other four groups (See Table 5).
- For the WJ-R Reading scale, there were no effects for preschool group or ethnicity.
- Kindergarten teachers' ratings on the Vineland Communication Domain were significantly higher for children in the community child care group than children in the other four groups.
- The scores of children who did not attend group care at all were usually the lowest.
- Children who attended public preschool and Head Start programs scored similarly on achievement measures in their kindergarten year.
- In general, girls tended to score higher than boys and white children higher than non-white.

Social outcomes:

- On the Social Skills scale of the SSQ, children who attended community child care were rated significantly higher by their kindergarten teachers than children who attended the standard or family-focused public preschool classes or children who did not attend group day care; they were rated marginally higher than the Head Start children.
- On the Academic Competence scale of the SSQ, children who previously attended community child care were scored higher by their kindergarten teachers than those in the other four groups.
- On the Problem Behaviors scale of the SSQ, no preschool group or ethnicity effects were found, although boys were rated higher in problem behaviors than girls.

Table 5
Means and SDs of Kindergarten Child Outcomes by Preschool Group[1]

	Standard Chapter 1	Family-focused	Head Start	Other Group Care	No Group Care
Child Assessments					
Number of children	186	34	97	99	120
Peabody Picture Vocabulary Test-R	78.6 (14.1)	81.1 (10.8)	77.7 (11.5)	85.5 (13.6)	76.4 (15.6)
Woodcock-Johnson					
Reading	93.3 (11.1)	94.6 (10.1)	92.6 (11.6)	96.3 (12.0)	93.6 (10.6)
Math	79.7 (12.7)	79.0 (11.9)	80.3 (14.0)	85.1 (14.8)	77.7 (13.8)
Teacher Ratings					
Number of children	174	32	90	87	111
Vineland Communication Domain	75.2 (14.4)	73.9 (12.9)	76.9 (17.1)	83.1 (16.8)	73.6 (15.0)
Social Skills Questionnaire					
Social Skills	38.2 (10.4)	37.7 (10.0)	38.7 (10.9)	42.3 (11.5)	37.9 (11.4)
Academic Competence	26.1 (9.0)	25.5 (10.0)	27.1 (9.4)	30.9 (9.6)	26.1 (9.8)
Problem Behaviors	10.4 (6.8)	10.6 (6.8)	10.8 (6.5)	9.2 (6.9)	9.8 (6.8)

[1] The public preschool children who paid full price for lunches are not included in this table.

Relationship between quality of preschool and kindergarten outcomes:

-Preschool classroom quality, as measured by several ECERS variables (Total score and Appropriate caregiving and Developmentally appropriate activities factors) was significantly or marginally significantly related to kindergartners' scores on the PPVT-R.

-On the WJ-R reading subscale, quality was positively related to reading scores for boys, and negatively related (although nonsignificantly) to reading scores for girls.

-There were no relationships between children's WJ-R math scores and any of the ECERS measures.

-Children who attended preschool classes where teachers used less directive language had higher math scores in kindergarten than those who attended preschool classes with more directive language.

-There were no effects of quality as measured by the ECERS on children's kindergarten communication skills as measured by the Vineland.

-There were no relationships between any of the ECERS measures of preschool classroom quality and any of the Social Skills Questionnaire subscales.

Discussion

A number of concerns regarding program policies were generated around the issues of eligibility criteria, logistical matters, resources, curriculum, and training. Problems were identified in each of these areas which may pose barriers to program quality, and should be addressed in continuing efforts toward improvement. The use of screening tests for admission to programs should be examined, to insure that such instruments are being used appropriately. The widespread use of such admissions criteria suggests that a particularly disadvantaged group is being served by these programs. Given that, it is important to be sure that adequate resources are available to children and teachers to provide an appropriate program. Access to an early education specialist by each program, along with other needed experts, needs to be provided. The relationship between training and implementation of an early childhood curriculum in the classroom needs to be further examined. Issues such as transportation, times of program operation, and location need to be examined in light of the needs of the children and families being served.

There is a wide range of quality and appropriateness of preschool classes in North Carolina, with many functioning in ways that meet standards of developmental appropriateness. One of the main goals of this study was to determine the developmental appropriateness of the public preschool programs of North Carolina. As a group, this was the highest rated research sample we have studied in the past three years (compared to kindergartens, Head Start classes and community child care programs). About 38% of public preschool classrooms met or exceeded our standard of developmental appropriateness (at least a 5.0 on the ECERS). About 27% were within half a point of 5.0, a reachable distance with a little more attention to certain developmental areas (e.g., more language interactions, more variety in activities, more child choice). However, 35% were functioning below this standard, so continuing support and encouragement are needed.

It is particularly distressing that the area of language use in the classroom was so low, the only subscale that was not at least close to or met the criterion for the overall sample. Most early childhood educators and researchers consider teacher language which encourages greater elaboration by children to be more optimal for children's development and consistent with a better quality classroom overall. This seems to be an important area to target for improvement program wide.

The study found positive associations of some of the classroom quality measures with teacher ratings of children's communication development and expressive social development at the end of preschool and with some of the assessed or rated behaviors of the children in kindergarten. However, there were generally no main effects, but certain relationships that held for certain groups or for specific measures. In general, the effects of quality were stronger for white than non-white children, and for girls than boys. The distinctions in quality seemed to matter more for children who started out at a higher developmental level at the beginning of preschool.

Although all groups showed improvement over the course of the preschool year, boys and girls still differed significantly in many areas both at the end of preschool and in kindergarten. In contrast, non-white children entered preschool with lower ratings than white children, but by the end of preschool there were no differences between ethnic groups and few differences in kindergarten. Given the generally high quality of the public preschool programs, it may be that differences in quality were less important in affecting children's outcomes than whether or not a child attended a program. However, the consistently lower scores of boys on preschool and kindergarten teachers' ratings and standardized assessments is notable. While gender differences in school performance and behavior have been found in numerous studies, it is still important to consider ways in which our school system can better meet the needs of all children.

Comparisons of kindergarten outcomes among children who attended public preschool (standard Chapter 1 or family-focused), Head Start, community daycare, or had no group care revealed a consistent pattern. Children who attended other community day care programs the year before kindergarten scored higher than children in the other groups on individual assessments of language and math, and were rated higher by their kindergarten teachers on social skills and communication development. There was also a trend for children who had no group care the year before kindergarten to score lowest. Participation in some type of child care or early intervention program seemed to be beneficial to the children from low-income families in our sample.

The children in all these groups were from low-income families. These children are often considered at-risk for school failure. The scores on the standardized assessments indicated that these children were scoring about one standard deviation below the expected population mean at mid-year in kindergarten, suggesting they are an at-risk group. The children in the public preschool group, who were frequently chosen for their preschool class on the basis of being the most in need, may have been relatively more disadvantaged.

The groups also likely differed in parental attitudes and behaviors, characteristics known to have an influence on children's development. The scope of the study did not allow us to obtain measures directly from families, but we attempted to broadly equate the groups in terms of eligibility for free or reduced-price lunch. This did not allow for finer distinctions in family SES, nor for other differences among families which may affect children's outcomes. Children who attended the other community day care programs were more likely to have had working parents, since these programs provide full-day care, in contrast to most public preschool and Head Start programs. They were also more likely to be exposed in their community day care program to a more heterogeneous group of children in terms of SES. This may have had a beneficial impact on the children in our sample.

This study may not have found a strong relationship between preschool quality and child outcomes because preschool quality, within a range limited to safe and non-harmful care, has less impact on children's outcomes than whether or not a child attends some type of program. We believe that differences in family factors, which children experience throughout their lives, are the more likely explanation, given previous research that has found such relationships. In trying to determine the effects of preschool quality, it would be important to examine the interaction between family characteristics and preschool experiences in explaining children's outcomes.

While this study has attempted to address the issues of the impact of public preschool program quality on children's outcomes and the differential impact of various types of pre-kindergarten programs on children's outcomes in kindergarten, the moderate findings of the impact of quality and the pattern of group differences suggest the need for additional information to clarify these results. In order to better address the question of the relative impact of public preschool programs compared to other programs on children's developmental outcomes and school success, it will be necessary to utilize a research design which includes information about the programs and the children and families in all groups at entry into preschool and then follows them into the early school years. Information about the families, including SES and parental beliefs and values about childrearing and education is a key variable for understanding group differences. It would also be important to obtain information about program quality and intensity of treatment across all groups, with both global and specific measures of classroom practices.

Recommendations

Based on the overall findings of this study, we make the following recommendations regarding the public preschool program.

1. The quality of the current public preschool programs was generally high. Teachers and administrators should be commended, yet encouraged to continue working on developmental appropriateness. As efforts toward expansion of the programs continue, maintaining the quality of these classes and of newly established preschool classes should be emphasized. Gradual expansion in the numbers of developmentally appropriate classes is preferable to rapid expansion, if rapid expansion causes a sacrifice in quality.

2. Some areas in the current programs seem to require special attention toward improving quality, both in the existing classes as well as in any new classes that are added. These areas include cultural awareness in the activities and materials within the classrooms, toileting facilities and practices, gross motor equipment, dramatic play materials and activities, furnishings for learning activities, and professional opportunities for teaching staff.

3. The proportion of teacher language that was directive and instructional suggests that teacher-child language interactions are an important area to target for teacher training. More responsive and elaborative teacher language leads to

greater use and improved skills in language by children. It is especially important to focus on giving teachers ways to implement this training in the classroom, rather than just providing knowledge-based training.

4. All programs, whether family-focused or standard Chapter 1 preschools should continue to attempt to involve families in their children's educational program. However, the findings of only a few differences between children who attended the family-focused versus the standard Chapter 1 classes at the end of preschool or in kindergarten suggests (a) that family involvement may not pay off in the short term in child-related outcomes, but rather in parent-focused outcomes or (b) that the methods used by these programs for family involvement may not actually get families involved. It is important to examine more closely the differences in what these programs offer to the families and whether they meet the needs of the families enrolled.

5. Pre-kindergarten programs should review their screening procedures. Programs funded by Chapter 1 are indeed required to use objective criteria, although screening measures are not specifically required. Parental educational level or observer ratings could be used. If screening assessments are used to enroll the most delayed children or to provide information to guide appropriate instruction, then measures should be carefully selected, administered and scored properly by trained and experienced staff, and used by knowledgeable teachers to plan activities that encourage areas of weakness and build on areas of strength.

6. The majority of children served by these programs were ethnic minorities, and their relatively greater improvement suggests that these programs are beneficially serving this group, and should continue doing so. The findings of no differences by ethnicity at the end of the preschool year suggests that these programs are beneficial for all children who attend, resulting in even greater gains for children who start out farther behind. The findings of a differential impact of the quality of these programs by ethnicity and the better performance of the public preschool children compared to children who did not attend group care suggest that for these minority children, attendance at the public preschool program, which is generally of good quality, is important for intervention efforts, while the finer distinctions in quality may be less important in determining their outcomes.

7. It is important to examine ways in which programs can be changed to be equally advantageous to both boys and girls. The findings of consistent differences in outcomes between boys and girls and differential effects of preschool quality on their outcomes merit attention.

8. Creating blended preschool classes which include both educationally disadvantaged children and non-disadvantaged children may be beneficial to the disadvantaged group currently being served. The findings of better performance in kindergarten by children in the community child care programs supports this idea. Community programs more likely included a heterogeneous mix of children by social class and may have been one of the factors resulting in the higher scores of these children relative to the other groups. Such blended classes are also more representative of the types of schooling experiences children will have beyond public preschool, and may help their adaptation to school by creating an environment which will already be more familiar once they reach kindergarten.

9. After-school care programs were not available in about 2/3 of the pre-kindergartens surveyed. For all working parents, and particularly for parents in continuing education or jobs training programs (which are components of many preschool programs), finding care after 2:30 p.m. can be an obstacle. Extending the hours of public preschool programs and finding other creative ways to provide after school care are ways to be family friendly as well as to ensure safe and appropriate late afternoon care for the children attending preschool.

10. Early childhood education specialists or mentor teachers, knowledgeable about developmentally appropriate practices, should be available as a resource to pre-kindergarten teachers and other early grade teachers. The start-up phase of new programs is an opportune time to infuse appropriate training, technical assistance, and monitoring. Programs that are in the process of growth and change can more readily be guided into adopting or developing age-appropriate and individually-appropriate learning settings on teaching strategies.

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